

(vii) PRIOR APPLICATION DATA:

(A) APPLICATION NUMBER: 60/132145  
(B) FILING DATE: 12/9/96

(viii) ATTORNEY/AGENT INFORMATION:

(A) NAME: Guise, Jeffrey W.  
(B) REGISTRATION NUMBER: 34,613  
(C) REFERENCE/DOCKET NUMBER: 231/003

(ix) TELECOMMUNICATION INFORMATION:

(A) TELEPHONE: (213) 489-1600  
(B) TELEFAX: (213) 955-0440  
(C) TELEX: 67-3510

(2) INFORMATION FOR SEQ ID NO: 1:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 786 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:

ATGATCGAAA	CATACAACCA	AACTTCTCCC	CGATCTGCGG	CCACTGGACT	GCCCATCAGC	60
ATGAAAATTT	TTATGTATTT	ACTTACTGTT	TTTCTTATCA	CCCAGATGAT	TGGGTCAGCA	120
CTTTTGTCTG	TGTATCTTCA	TAGAAGGTTG	GACAAGATAG	AAGATGAAAG	GAATCTTCAT	180
GAAGATTTTG	TATTCATGAA	AACGATACAG	AGATGCAACA	CAGGAGAAAG	ATCCTTATCC	240
TTACTGAACT	GTGAGGAGAT	TAAAAGCCAG	TTTGAAGGCT	TTGTGAAGGA	TATAATGTTA	300
AACAAAGAGG	AGACGAAGAA	AGAAAAACAGC	TTTGAATGTC	AAAAAAGGTGA	TCAGAATCCT	360
CAAATTGCGG	CACATGTCAT	AAGTGAGGCC	AGCAGTAAAA	CAACATCTGT	GTTACAGTGG	420
GCTGAAAAAG	GATACTACAC	CATGAGCAAC	AACTTGGTAA	CCCTGGAAAA	TGGGAAACAG	480
CTGACCGTTA	AAAGACAAGG	ACTCTATTAT	ATCTATGCCC	AAGTCACCTT	CTGTTCCAAT	540
CGGGAAGCTT	CGAGTCAAGC	TCCATTTATA	GCCAGCCTCT	GCCTAAAGTC	CCCCGGTAGA	600
TTCGAGAGAA	TCTTACTCAG	AGCTGCAAAT	ACCCACAGTT	CCGCCAAACC	TTGCGGGCAA	660
CAATCCATTC	ACTTGGGAGG	AGTATTTGAA	TTGCAACCAG	GTGCTTCGGT	GTTTGTCAAT	720
GTGACTGATC	CAAGCCAAGT	GAGCCATGGC	ACTGGCTTCA	CGTCCTTTGG	CTTACTCAAA	780
CTCTGA						786

(2) INFORMATION FOR SEQ ID NO: 2:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 783 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:

ATGATAGAAA	CATACAGCCA	ACCTTCCCCC	AGATCCGTGG	CAACTGGACT	TCCAGCGAGC	60
ATGAAGATTT	TTATGTATTT	ACTTACTGTT	TTCTTATCA	CCCAAATGAT	TGGATCTGTG	120
CTTTTTGCTG	TGTATCTTCA	TAGAAGATTG	GATAAGGTCG	AAGAGGAAGT	AAACCTTCAT	180
GAAGATTTTG	TATTCATAAA	AAAGCTAAAG	AGATGCAACA	AAGGAGAAGG	ATCTTTATCC	240
TTGCTGAAC	GTGAGGAGAT	GAGAAGGCAA	TTTGAAGACC	TTGTCAAGGA	TATAACGTTA	300
AACAAAGAAG	AGAAAAAAGA	AAACAGCTTT	GAAATGCAAA	GAGGTGATGA	GGATCCTCAA	360
ATTGCAGCAC	ACGTTGTAAG	CGAAGCCAAC	AGTAATGCAG	CATCCGTTCT	ACAGTGGGCC	420
AAGAAAGGAT	ATTATACCAT	GAAAAGCAAC	TTGGTAATGC	TTGAAAATGG	GAAACAGCTG	480
ACGTTTAAAA	GAGAAGGACT	CTATTATGTC	TACACTCAAG	TCACCTTCTG	CTCTAATCGG	540
GAGCCTTCGA	GTCAACGCCC	ATTTCATCGTC	GGCCTCTGGC	TGAAGCCCAG	CATTGGATCT	600
GAGAGAATCT	TACTCAAGGC	GGCAAATACC	CACAGTTCCT	CCCAGCTTTG	CGAGCAGCAG	660
TCTGTTCACT	TGGGCGGAGT	GTTTGAATTA	CAAGCTGGTG	CTTCTGTGTT	TGTCAACGTG	720
ACTGAAGCAA	GCCAAGTGAT	CCACAGAGTT	GGCTTCTCAT	CTTTTGGCTT	ACTCAAACCTC	780
TGA						783

(2) INFORMATION FOR SEQ ID NO: 3:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 783 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:

ATGATCGAAA	CATACAACCA	AACTTCTCCC	CGATCTGCGG	CCACTGGACT	GCCCATCAGC	60
ATGAAAAATTT	TTATGTATTT	ACTTACTGTT	TTTCTTATCA	CCCAGATGAT	TGGGTCAGCA	120
CTTTTTGCTG	TGTATCTTCA	TAGAAGATTG	GATAAGGTCG	AAGAGGAAGT	AAACCTTCAT	180
GAAGATTTTG	TATTCATAAA	AAAGCTAAAG	AGATGCAACA	AAGGAGAAGG	ATCTTTATCC	240
TTGCTGAAC	GTGAGGAGAT	GAGAAGGCAA	TTTGAAGACC	TTGTCAAGGA	TATAACGTTA	300
AACAAAGAAG	AGAAAAAAGA	AAACAGCTTT	GAAATGCAAA	GAGGTGATGA	GGATCCTCAA	360
ATTGCAGCAC	ACGTTGTAAG	CGAAGCCAAC	AGTAATGCAG	CATCCGTTCT	ACAGTGGGCC	420
AAGAAAGGAT	ATTATACCAT	GAAAAGCAAC	TTGGTAATGC	TTGAAAATGG	GAAACAGCTG	480
ACGTTTAAAA	GAGAAGGACT	CTATTATGTC	TACACTCAAG	TCACCTTCTG	CTCTAATCGG	540
GAGCCTTCGA	GTCAACGCCC	ATTTCATCGTC	GGCCTCTGGC	TGAAGCCCAG	CATTGGATCT	600
GAGAGAATCT	TACTCAAGGC	GGCAAATACC	CACAGTTCCT	CCCAGCTTTG	CGAGCAGCAG	660
TCTGTTCACT	TGGGCGGAGT	GTTTGAATTA	CAAGCTGGTG	CTTCTGTGTT	TGTCAACGTG	720
ACTGAAGCAA	GCCAAGTGAT	CCACAGAGTT	GGCTTCTCAT	CTTTTGGCTT	ACTCAAACCTC	780
TGA						783

(2) INFORMATION FOR SEQ ID NO: 4:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 786 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:

ATGATCGAAA	CATACAACCA	AACTTCTCCC	CGATCTGCGG	CCACTGGACT	GCCCATCAGC	60
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ATGAAAATTT	TTATGTATTT	ACTTACTGTT	TTCCTTATCA	CCCAAATGAT	TGGATCTGTG	120
CTTTTGTCTG	TGTATCTTCA	TAGAAGGTTG	GACAAGATAG	AAGATGAAAG	GAATCTTCAT	180
GAAGATTTTG	TATTCATGAA	AACGATACAG	AGATGCAACA	CAGGAGAAAG	ATCCTTATCC	240
TTACTGAACT	GTGAGGAGAT	TAAAAGCCAG	TTTGAAGGCT	TTGTGAAGGA	TATAATGTTA	300
AACAAAGAGG	AGACGAAGAA	AGAAAAACAGC	TTTGAAATGC	AAAAAGGTGA	TCAGAATCCT	360
CAAATTGCGG	CACATGTCAT	AAGTGAGGCC	AGCAGTAAAA	CAACATCTGT	GTTACAGTGG	420
GCTGAAAAAG	GATACTACAC	CATGAGCAAC	AACTTGGTAA	CCCTGGAAAA	TGGGAAACAG	480
CTGACCGTTA	AAAGACAAGG	ACTCTATTAT	ATCTATGCCC	AAGTCACCTT	CTGTTCCAAT	540
CGGGAAGCTT	CGAGTCAAGC	TCCATTTATA	GCCAGCCTCT	GCCTAAAGTC	CCCCGGTAGA	600
TTGAGAGAA	TCTTACTCAG	AGCTGCAAAAT	ACCCACAGTT	CCGCCAAACC	TTGCGGGCAA	660
CAATCCATTC	ACTTGGGAGG	AGTATTTGAA	TTGCAACCAG	GTGCTTCGGT	GTTTGTCAAT	720
GTGACTGATC	CAAGCCAAGT	GAGCCATGGC	ACTGGCTTCA	CGTCCTTTGG	CTTACTCAAA	780
CTCTGA						786

(2) INFORMATION FOR SEQ ID NO: 5:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 783 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5:

ATGATCGAAA	CATACAACCA	AACTTCTCCC	CGATCTGCGG	CCACTGGACT	GCCCATCAGC	60
ATGAAAATTT	TTATGTATTT	ACTTACTGTT	TTCCTTATCA	CCCAAATGAT	TGGATCTGTG	120
CTTTTGTCTG	TGTATCTTCA	TAGAAGATTG	GATAAGGTCG	AAGAGGAAGT	AAACCTTCAT	180
GAAGATTTTG	TATTCATAAA	AAAGCTAAAG	AGATGCAACA	AAGGAGAAGG	ATCTTTATCC	240
TTGCTGAACT	GTGAGGAGAT	GAGAAGGCAA	TTTGAAGACC	TTGTCAAGGA	TATAACGTTA	300
AACAAAGAAG	AGAAAAAAGA	AAACAGCTTT	GAAATGCAAA	GAGGTGATGA	GGATCCTCAA	360
ATTGCAGCAC	ACGTTGTAAG	CGAAGCCAAC	AGTAATGCAG	CATCCGTTCT	ACAGTGGGCC	420
AAGAAAGGAT	ATTATACCAT	GAAAAGCAAC	TTGGTAATGC	TTGAAAATGG	GAAACAGCTG	480
ACGGTTAAAA	GAGAAGGACT	CTATTATGTC	TACACTCAAG	TCACCTTCTG	CTCTAATCGG	540
GAGCCTTCGA	GTCAACGCCC	ATTCATCGTC	GGCCTCTGGC	TGAAGCCCAG	CATTGGATCT	600
GAGAGAATCT	TACTCAAGGC	GGCAAATACC	CACAGTTCCT	CCCAGCTTTG	CGAGCAGCAG	660
TCTGTTCACT	TGGGCGGAGT	GTTTGAATTA	CAAGCTGGTG	CTTCTGTGTT	TGTCAACGTG	720
ACTGAAGCAA	GCCAAAGTGAT	CCACAGAGTT	GGCTTCTCAT	CTTTTGGCTT	ACTCAAACCT	780
TGA						783

(2) INFORMATION FOR SEQ ID NO: 6:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 786 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6:

ATGATAGAAA	CATACAGCCA	ACCTTCCCCC	AGATCCGTGG	CAACTGGACT	TCCAGCGAGC	60
ATGAAGATTT	TTATGTATTT	ACTTACTGTT	TTTCTTATCA	CCCAGATGAT	TGGGTCAGCA	120
CTTTTGTCTG	TGTATCTTCA	TAGAAGGTTG	GACAAGATAG	AAGATGAAAG	GAATCTTCAT	180
GAAGATTTTG	TATTCATGAA	AACGATACAG	AGATGCAACA	CAGGAGAAAG	ATCCTTATCC	240
TTACTGAACT	GTGAGGAGAT	TAAAAGCCAG	TTTGAAGGCT	TTGTGAAGGA	TATAATGTTA	300

461021 2428680

AACAAAGAGG	AGACGAAGAA	AGAAAACAGC	TTTGAAATGC	AAAAAGGTGA	TCAGAATCCT	360
CAAATTGCGG	CACATGTCAT	AAGTGAGGCC	AGCAGTAAAA	CAACATCTGT	GTTACAGTGG	420
GCTGAAAAAG	GATACTACAC	CATGAGCAAC	AACTTGGTAA	CCCTGGAAAA	TGGGAAACAG	480
CTGACCGTTA	AAAGACAAGG	ACTCTATTAT	ATCTATGCCC	AAGTCACCTT	CTGTTCCAAT	540
CGGGAAGCTT	CGAGTCAAGC	TCCATTTATA	GCCAGCCTCT	GCCTAAAGTC	CCCCGGTAGA	600
TTCGAGAGAA	TCTTACTCAG	AGCTGCAAAT	ACCCACAGTT	CCGCCAAACC	TTGCGGGCAA	660
CAATCCATTC	ACTTGGGAGG	AGTATTTGAA	TTGCAACCAG	GTGCTTCGGT	GTTTGTCAAT	720
GTGACTGATC	CAAGCCAAGT	GAGCCATGGC	ACTGGCTTCA	CGTCCTTTGG	CTTACTCAAA	780
CTCTGA						786

(2) INFORMATION FOR SEQ ID NO: 7:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 786 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7:

ATGATAGAAA	CATACAGCCA	ACCTTCCCCC	AGATCCGTGG	CAACTGGACT	TCCAGCGAGC	60
ATGAAGATTT	TTATGTATTT	ACTTACTGTT	TTCCCTTATCA	CCCAAATGAT	TGGATCTGTG	120
CTTTTTGCTG	TGTATCTTCA	TAGAAGGTTG	GACAAGATAG	AAGATGAAAG	GAATCTTCAT	180
GAAGATTTTG	TATTCATGAA	AACGATACAG	AGATGCAACA	CAGGAGAAAG	ATCCTTATCC	240
TTACTGAACT	GTGAGGAGAT	TAAAAGCCAG	TTTGAAGGCT	TTGTGAAGGA	TATAATGTTA	300
AACAAAGAGG	AGACGAAGAA	AGAAAACAGC	TTTGAAATGC	AAAAAGGTGA	TCAGAATCCT	360
CAAATTGCGG	CACATGTCAT	AAGTGAGGCC	AGCAGTAAAA	CAACATCTGT	GTTACAGTGG	420
GCTGAAAAAG	GATACTACAC	CATGAGCAAC	AACTTGGTAA	CCCTGGAAAA	TGGGAAACAG	480
CTGACCGTTA	AAAGACAAGG	ACTCTATTAT	ATCTATGCCC	AAGTCACCTT	CTGTTCCAAT	540
CGGGAAGCTT	CGAGTCAAGC	TCCATTTATA	GCCAGCCTCT	GCCTAAAGTC	CCCCGGTAGA	600
TTCGAGAGAA	TCTTACTCAG	AGCTGCAAAT	ACCCACAGTT	CCGCCAAACC	TTGCGGGCAA	660
CAATCCATTC	ACTTGGGAGG	AGTATTTGAA	TTGCAACCAG	GTGCTTCGGT	GTTTGTCAAT	720
GTGACTGATC	CAAGCCAAGT	GAGCCATGGC	ACTGGCTTCA	CGTCCTTTGG	CTTACTCAAA	780
CTCTGA						786

(2) INFORMATION FOR SEQ ID NO: 8:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 864 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 8:

AACTCTAACG	CAGCATGATC	GAAACATACA	GTCAACCTTC	TCCCCGCTCC	GTGGCCACTG	60
GACCACCTGT	CAGTATGAAA	ATTTTTATGT	ATTTACTTAC	AGTTTTTCTT	ATCACCCAGA	120
TGATTGGGTC	AGCGCTTTTT	GCTGTGTATC	TTCACAGACG	ATTGGACAAG	ATAGAAGACG	180

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GTGGGATGTG	GGATGACAGA	CAGAGAGGAC	AGGAACCGGA	TGTGGGGTGG	GCAGAGCTCG	2100
AGGGCCAGGA	TGTGGAGAGT	GAACCGACAT	GGCCACACTG	ACTCTCCTCT	CCCTCTCTCC	2160
CTCCCTCCAG	CAAACCCCTCA	AGCTGAGGGG	CAGCTCCAGT	GGCTGAACCG	CCGGGCCAAT	2220
GCCCTCCTGG	CCAATGGCGT	GGAGCTGAGA	GATAACCAGC	TGGTGGTGCC	ATCAGAGGGC	2280
CTGTACCTCA	TCTACTCCCA	GGTCTCTTTC	AAGGGCCAAAG	GCTGCCCCCTC	CACCCATGTG	2340
CTCCTCACCC	ACACCATCAG	CCGCATCGCC	GTCTCCTACC	AGACCAAGGT	CAACCTCCTC	2400
TCTGCCATCA	AGAGCCCCTG	CCAGAGGGAG	ACCCCAAGAG	GGGCTGAGGC	CAAGCCCTGG	2460
TATGAGCCCA	TCTATCTGGG	AGGGGTCTTC	CAGCTGGAGA	AGGGTGACCG	ACTCAGCGCT	2520
GAGATCAATC	GGCCCGACTA	TCTCGACTTT	GCCGAGTCTG	GGCAGGTCTA	CTTTGGGATC	2580
ATTGCCCTGT	GAGGAGGACG	AACATCCAAC	CTTCCCAAAAC	GCCTCCCCCTG	CCCCAATCCC	2640
TTTATTACCC	CCTCCTTCAG	ACACCCCTCA	CCTCTTCTGG	CTCAAAAAGA	GAATTGGGGG	2700
CTTAGGGTCG	GAACCCAAGC	TTAGAACTTT	AAGCAACAAG	ACCACCACTT	CGAAACCTGG	2760
GATTCAAGAA	TGTGTGGCCT	GCACAGTGAA	GTGCTGGCAA	CCACTAAGAA	TTCAAACCTG	2820
GGCCTCCAGA	ACTCACTGGG	GCCTACAGCT	TTGATCCCTG	ACATCTGGAA	TCTGGAGACC	2880
AGGGAGCCTT	TGTTTCTGGC	CAGAATGCTG	CAGGACTTGA	GAAGACCTCA	CCTAGAAAATT	2940
GACACAAGTG	GACCTTAGGC	CTTCCTCTCT	CCAGATGTTT	CCAGACTTCC	TTGAGACACG	3000
GAGCCCAGCC	CTCCCCATGG	AGCCAGCTCC	CTCTATTTAT	GTTTGCACCT	GTGATTATTT	3060
ATTATTTATT	TATTATTTAT	TTATTTACAG	ATGAATGTAT	TTATTTGGGA	GACCGGGGTA	3120
TCCTGGGGGA	CCCAATGTAG	GAGCTGCCTT	GGCTCAGACA	TGTTTTCCGT	GAAAACGGAG	3180
CTGAACAATA	GGCTGTTCCC	ATGTAGCCCC	CTGGCCTCTG	TGCCCTTCTT	TGATTATGTT	3240
TTTTAAAATA	TTTATCTGAT	TAAGTTGTCT	AAACAATGCT	GATTTGGTGA	CCAACTGTCA	3300
CTCATTGCTG	AGCCTCTGCT	CCCCAGGGGA	GTTGTGTCTG	TAATCGCCCT	ACTATTCAGT	3360
GGCGAGAAAT	AAAGTTTGCT	TAGAAAAGAA	ACATGGTCTC	CTTCTTGGA	TTAATTCTGC	3420
ATCTGCCTCT	TCTTGTGGGT	GGGAAGAAGC	TCCCTAAGTC	CTCTCTCCAC	AGGCTTTAAG	3480
ATCCCTCGGA	CCCAGTCCCA	TCCTTAGACT	CCTAGGGCCC	TGGAGACCCT	ACATAAACAA	3540
AGCCCAACAG	AATATTCCCC	ATCCCCCAGG	AAACAAGAGC	CTGAACCTAA	TTACCTCTCC	3600
CTCAGGGCAT	GGGAATTTCC	AACTCTGGGA	ATTC			3634

(2) INFORMATION FOR SEQ ID NO: 10:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1997 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10:

GAGACAGAGT	CTTGCTCTGT	CCCCCAGGCT	GGAATACAGT	GGTGCGATCT	TGACTCACTG	60
CAGCCTCCGC	CTCCCAGGTT	CAAATAATTC	TCCAGCCTCA	GCCTCCCGAG	TAGCTGGGAC	120
TGCAGATGCG	CACCAGCACG	CCTGGCTAAT	TTTTGTATTT	ATTATAGAGA	TGGGGTTTCA	180
CCATGTTGGC	CAGCTGGTCT	CAAACCTCCTG	ACCTCAAGTA	ATCCGCCCAC	CTCAGACTCC	240
CAAAGTGCCA	GGATTACAGG	TGTGAGCCAC	TGCACCAGGC	CTGGAACAAT	TTTAAAAATAA	300
TGTATTGGCT	CTGCAAATGC	AGCTTCAGAA	CAAGTCCCTT	AGCTGTCCCC	ACCCACCCCT	360
AAGTCACCAC	CCTTAAGCCT	CACCCATGTG	GAATTCTGAA	ACTTCCTTTG	TAGAAAACCTT	420
TGGAAGGTGT	CTGCCACATT	GATCCTGGAA	TGTGTGTTTA	TTTGGGGTTA	TATAAATCTG	480
TTCTGTGGAA	GCCACCTGAA	GTCAGGAAGA	GATGGAGGGC	ATCCTTCAGG	AGTGAGATGA	540
GACCTCATCA	TACTTGACTG	TCCAGCATCA	TCTCTGAGTA	AGGGGACCAA	AAAATTTATC	600
TTCCAAACTA	GGACACTTTC	AAGAGTGGA	GGGGGATCCA	TTAATATTTT	CACCTGGACA	660
AGAGGCAAAC	ACCAGAAATG	CCCCGATGAA	GGGGATATAT	AATGGACCTT	CTTGATGTGA	720
AACCTGCCAG	ATGGGCTGGA	AAGTCCGTAT	ACTGGGACAA	GTATGATTTG	AGTTGTTTGG	780
GACAAGGACA	GGGGTACAAG	AGAAGGAAAT	GGGCAAAGAG	AGAAGCCTGT	ACTCAGCCAA	840
GGGTGCAGAG	ATGTTATATA	TGATTGCTCT	TCAGGGAACC	GGGCCTCCAG	CTCACACCCC	900
AGCTGCTCAA	CCACCTCCTC	TCTGAATTGA	CTGTCCCTTC	TTTGGAATC	TAGGCCTGAC	960
CCCCTCCCT	GGCCCTCCCA	GCCCACGATT	CCCCTGACCC	GACTCCCTTT	CCCAGAACTC	1020
AGTCGCCTGA	ACCCCAAGCC	TGTGGTTCTC	TCCTAGGCCT	CAGCCTTTCC	TGCCTTTGAC	1080

TGAAACAGCA	GTATCTTCTA	AGCCCTGGGG	GCTTCCCCCG	GCCCCAGCCC	CGACCTAGAA	1140
CCCCCCCCGT	GCCTGCCACG	CTGCCACTGC	CGTTTCCTCT	ATAAAGGGAC	CTGAGCGTCC	1200
GGGCCCCAGG	GCTCCGCACA	GCAGGTGAGG	CTCTCCTGCC	CCATCTCCTT	GGGCTGCCCC	1260
TGCTTCGTGC	TTTGGACTAC	CGCCCAGCAG	TGTCCTGCCC	TCTGCCTGGG	CCTCGGTCCC	1320
TCCTGCACCT	GCTGCCTGGA	TCCCCGGCCT	GCCTGGGCCCT	GGGCTTGGTG	GGTTTGGTTT	1380
TGGTTTCCTT	CTCTGTCTCT	GACTCTCCAT	CTGTCACTCT	CATTGTCTCT	GTCACACATT	1440
CTCTGTTTCT	GCCATGATTC	CTCTCTGTTT	CCTTCCTGTC	TCTCTCTGTC	TCCCTCTGCT	1500
CACCTTGGGG	TTTCTCTGAC	TGCATCTTGT	CCCCTTCTCT	GTCGATCTCT	CTCTCGGGGG	1560
TCGGGGGGTG	CTCTCTCCCA	GGGCGGGAGG	TCTGTCTTCC	GCCGCGTGCC	CCGCCCCGCT	1620
CACTGTCTCT	CTCTCTCTCT	CTCTTTCTCT	GCAGGTTCTC	CCCATGACAC	CACCTGAACG	1680
TCTCTTCCCT	CCAAGGGTGT	GTGGCACCAC	CCTACACCTC	CTCCTTCTGG	GGCTGCTGCT	1740
GGTTCTGCTG	CCTGGGGCCC	AGGTGAGGCA	GCAGGAGAA	GGGGGCTGCT	GGGGTGGCTC	1800
AGCCAAACCT	TGAGCCCTAG	AGCCCCCCTC	AACTCTGTTT	TCCCCTAGGG	GCTCCCTGGT	1860
GTTGGCCTCA	CACCTTCAGC	TGCCCAGACT	GCCCCGTCAG	ACCCCAAGAT	GCATCTTGCC	1920
CACAGCACCC	TCAAACCTGC	TGCTCACCTC	ATTGGTAAAC	ATCCACCTGA	CCTCCCAGAC	1980
ATGTCCCCAC	CAGCTCT					1997

(2) INFORMATION FOR SEQ ID NO: 11:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 10240 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 11:

GAATCCCCCG	GATCAAAGTC	AGCATTAAAT	CCCAGTTTAG	GTTTTGAGGC	TAAGTTCAAG	60
TTTGAGTCTA	ATGTCAATTC	AGCCTTGTTT	GGAGGACTCA	GAGATTTTCA	TAGTTTCTCC	120
GCAGAGACCA	CTGTAGAAAC	TGCATTTCCC	TGAGTTTGGG	GCACAAGACT	CCAGTCATCA	180
CCCCCTCCAC	ACAGGGAAG	CCCCAAACCA	ACTGCTGGCC	TCCTCAAGAA	AGAAACCGAA	240
TTTCACACAA	CCTCCGAAAC	TAAGATTGAA	ACCAAGATTG	GCCCATCTCA	AGGCGCGTCC	300
TCCAGCACAT	TGAGAATGTC	GCTGATGGAG	CCTCGGCCCA	GCTCTCGAGC	TTCCTTCCCT	360
TCTGTCTCTC	ATGTCTTCTC	ATCACTCCTT	CTCACCTTCC	CGTTTTTGTG	CTGCAATGCC	420
CCCTTCTTCC	TCTCTTCCCT	GGGTTTTTCC	CTTTATTTCT	CACTGTACCA	TTTTATATTT	480
TAATAAAGCC	GAGGTCTCCT	AGTCCATCAG	CTCCTACTGT	TGGAGAGGAG	GCAGAAAGAA	540
ACAGCAGGAG	GGCAAGGGA	TCCAGAGAA	AGAGACTCAG	AGGAAAGGCA	AGAAACAGGG	600
ACCAAGAGAG	AGGCCAACAG	TGACACAAAG	CACAGTAGAG	TTAAAAGAAA	TAAGATGAGG	660
CCAAGATAGA	GACCAAGCTA	TTTAAAAGAG	CCATCTGTGG	CTACCCCTTCT	TCCGCCATCG	720
CATCTGGTCA	GCCACCAAGA	TTTTGCCTAG	AAACGTTCCCT	CCTCTCCATT	CTCCTGCTGC	780
TGCTGCTGCT	GCTGCTGCTG	CTGCTGCTGC	TGCTGCTGCT	GCTGCTGCTG	CTGCCCTAAT	840
ACGAATGCAG	GCTCTTGTC	TCTCCTTGCT	GGGTTGTTGC	AAAATCCTCC	TAACTGGTCT	900
CCACACTTCT	CATTTCCCCCT	CCAGCCCCCC	ATCTTCCATA	CTTCCATTTA	TTTATTTTGG	960
CCATGCCCCAT	GGCATGTGGC	AGTTCCAGGG	GCCAGGGATC	AAACCTGTGC	CAATGCAGTG	1020
ACCGTGTGAG	ATCCTTAACC	CACTGCACAC	AAGGCAACGC	CCCTCGAGTC	ATTCTCATTT	1080
TTTAAATATA	CCAATTTGAG	GGGGTCCCTC	TTTCACTTAA	AAATTTTGGC	AGCTCCCTAT	1140
CATGATGAGA	AGGAATTCCA	AACCATTTTT	CTTGTGTGCA	AACCCTTCAG	CATGTGTCTT	1200
CAGCTTACTT	CCCAAGCCTC	ATCCCTGCTC	CTTCTACGTG	TACCCATGTG	TACATCTCCA	1260
CACACCATAT	ACTCTTTTTT	ACCTCCCATC	TTTGCACCTT	CTGTTCCCTC	TCTCTGCCCC	1320
TCACCATCTT	TTTTGCTTTG	ATACTTAATG	CCTCTCCCTC	AGGCCAGGTT	CAATGGCTTT	1380
TCTGTGGGCT	GCTTTAAGCC	CACTGTCTAT	GAACCTTATCA	CATTTTATTT	TATTTGACTT	1440
TCTTTTATAG	GCCGCACCCA	GCATATGGAG	ATTCCCAGGC	TAGGGATCTA	ATCGGAGCTG	1500
TATCTGCCAG	CCTGCGCTGG	AGCCACAGCA	ACGTGGGATC	CGAGCCTGAG	GGGTTTTGAT	1560
GTCCTGTGGC	ACAGAAGTTA	CATTCAGGCT	GTGCATGAAC	TATTTCTCCT	GTTCTCCTCC	1620
CCCTGCTTGA	GGCCCTGCAG	CTTTGCCTCT	CATGCCTTGC	TGCTCTGACC	TATGACTTCT	1680
TTTTGTTTGC	ATTCCATCTC	TTTAGTTTTT	TCTCTGTTCC	ACAAACATTT	ACTGAGCATC	1740
TACATGAGGC	ATTGAGGATA	CGGATGGGAA	AGACAGTCCC	CTGACCTCTG	GGACCTCAAA	1800
GACCAATTGT	GGAAGACTGG	TTGGTTATCA	GATAATTACA	ATGAAGTGTG	GGAGTCCCTG	1860

SEQUENCE LISTING

(1) GENERAL INFORMATION:

(i) APPLICANTS: Kipps, Thomas J.  
Sharma, Sanjai  
Cantwell, Mark

(ii) TITLE OF INVENTION: NOVEL EXPRESSION VECTORS  
CONTAINING ACCESSORY  
MOLECULE LIGAND GENES AND  
THEIR USE FOR IMMUNO-  
MODULATION AND TREATMENT OF  
MALIGNANCIES

(iii) NUMBER OF SEQUENCES: 44

(iv) CORRESPONDENCE ADDRESS:

(A) ADDRESSEE: Lyon & Lyon  
(B) STREET: 633 West Fifth Street  
Suite 4700  
(C) CITY: Los Angeles  
(D) STATE: California  
(E) COUNTRY: U.S.A.  
(F) ZIP: 90071-2066

(v) COMPUTER READABLE FORM:

(A) MEDIUM TYPE: 3.5" Diskette,  
1.44 Mb storage  
(B) COMPUTER: IBM Compatible  
(C) OPERATING SYSTEM: IBM P.C. DOS 5.0  
(D) SOFTWARE: FastSeq Version 2.0

(vi) CURRENT APPLICATION DATA:

(A) APPLICATION NUMBER: To Be Assigned  
(B) FILING DATE:  
(C) CLASSIFICATION:

2025-11-27 14:22:22



TGCTGGGTCA	GCAGGTAATG	AACCCAGTAA	ACGATCCATG	AGGATGCAGA	TTCAATCCCT	1920
GGCCTTGCTC	AGCGGGTTAA	GGATCCAGCG	TTCCCACAAG	CTGTGGTGTA	GGTCGCAGAT	1980
GCGACTCAGA	TCTTGCATTG	CTGTGGCTGT	GGTGTAGGCT	GGTGGCTACC	CCTAGCCTGG	2040
GAACCTCCAT	ATGCCTCAGG	TGCGGCCCTA	AAAGACAAAA	AAAAAAAAGA	GAGAAACTTT	2100
TCTTTTTCTT	AATGTGTAAC	CTACAAGCTA	AGTGAAAAC	GGCTCCTATT	CCATAACGTT	2160
TGTATCATTT	TTCATACTAG	CCAAATACTA	GAAACAGGGA	GTTCCCCGTC	TGGTGCAGCA	2220
GAAACAAATT	CGACTAGGAA	CCATGAGGTT	GCGGGTTCGA	TCCCTGGCCT	TGCTCAGTGG	2280
GTTAAGGATC	CGGCGTTGCC	GTGAGCTGTG	GTGTAGGTCG	CAGATGTGGC	TCGGACTCTAG	2340
TGTTGCTGTG	GCTCTGGTGT	AGGCCGCGAG	CAACAGCTCT	GATTAGACTC	CTAGCCTGAG	2400
AACCTCCATA	AGCTGTGGCT	GCGGCCCTAT	AAAGACAAAA	AAAAAAAAGA	GGCCAAATAC	2460
TAGAAACAAA	CCAAATGCCC	ATCAACAGAA	GAATAGATAA	GTTAATTGGG	GTATATGCAC	2520
ACAATAGCAT	CACACAATAA	CATGCACACA	ATAACATCAC	AATGAAATAA	AAATTACTAC	2580
TGACAGACAC	AACCATATAG	ATGAATTTCA	CAAACACAAC	AGCGAGAATA	AAAGCCAAGC	2640
ACAGATGAGT	TGTCTGTGTG	GATTCATTTT	TATGAAGTTC	AAGCGCAGGA	AGAACTTAAT	2700
CTATAGTGAC	AGAGGTCAGA	GAGCAGTTGG	TTGTCTTTGG	CAGGTATGAA	CTGGGAGTGG	2760
GCATGAGAGA	ACTTTCTGGA	GACCTAAAAA	TATATTGGAC	TGGATGGTGG	CAACATGGCT	2820
ACAAGAAGAT	GGAAAAGTTC	CTCAGGCTGT	CCACTTGGGA	GACGGGCTTC	TCACGGGACC	2880
TAAGTTCTGC	ATCAGCAGAG	GGGAAAATCC	TTAATGATTT	GACAATTACA	AAGTGTATTG	2940
GCTTTTACCGA	TGTATTTTCA	ACACAATCTG	TCTGCTGTCC	CCACCCACCC	CTAGGTCACC	3000
ACCTTTAAGC	TCCACCTGTG	TGGAATTTCC	AAGCCTCCCC	TGATGAGAAC	TTTAGCAGTT	3060
GCCACGTTCT	TTTGATGCAG	GAACGTGTTG	TCTAGAGTTA	GACACATCTG	ATCTGTGGGG	3120
CCCACCCAAG	GTTGGGACAT	GGTGGGGGGC	GGCCTTCTGC	AGTGAGATGA	AACCTCATTG	3180
TAGGTGATTT	CGTGGCCTCA	TCCCTGAGTC	AGATCTTCCA	AATGAGGACA	CTTTGGAGAG	3240
CAAAAGGGGG	CTCCTGAAG	ATTTCTCTCA	GGACAGCAGG	AACAAACCAG	GATGTCCCAG	3300
GCAGGAGGGT	ATAGAAGGGA	ACTTGTTGAT	ATGAAATCAG	CCAGATGACC	TGGAAAATAC	3360
ACAGACTGGG	ACAAGTGTGA	CTTGAGCCTC	TTGGGCCCAG	GACAGGGGTA	CAGAGGAGGA	3420
AACGTGCACA	GAGAGAAGCC	CGTAATCAGC	CAAGGCTGCA	GAGGTGTTAT	ACATAATCGC	3480
TCTTCACGCA	ACCGGAGCAAG	CAGCCCCAGC	CCGAGCTGCA	CTCCATCTCC	TCCTCTGAAC	3540
TCACCGTCCC	TTCTCTGGAA	CTCCTAAGCC	TGACCCCGCT	CCCTGGCCCT	CCAGCCCCAC	3600
GGTTCCCCCTG	ACCCCACTCC	CTTTCCCAGA	ACTCAGTCAT	CTGAGCCCCC	AGCCTGCGTT	3660
CTCTCCTAGG	CCTCAGCCTT	TCCTGCCTTC	GCGTGAAACA	GCAGCATCTT	CTAAGCCCTG	3720
GGCTTCCCCA	GGCCCCAGCC	CCGGCCTAGA	ACCCGCCCAG	CCGACCTGCC	CACGCTGCCA	3780
CTGCCGGCTT	CCTCTATAAA	GGGACCCAGG	GCGCCCAGAA	AGGGGCCCCAC	AGGGGTCCCG	3840
CACAGCAGGT	GAGACTCTCC	CACCCCATCT	CCTAGGGCTG	TCCGGGTGCT	GGACTCCCCC	3900
CTCACTTCGG	TCCCTCCGCC	CGCTCCCTGG	CCTTCCTGCC	CCTCCTGCAT	CTTCACCCCG	3960
GCCTGGGCCT	TGGTGGGTTT	GGTTTTGGTT	TGTTCTCTCT	GATTCTTTAT	CTGTCAGGCT	4020
CTTTCTAGCT	CTCACACACT	CTGATCCCTC	TCTGTTCCCT	TCCCATCTCT	GTTTCTCTCT	4080
GGGTCTCCCC	CTGCTACCTT	CGGGATTTCC	CTGAGTGCCT	CTGGTCCCCT	TCTCTGTCTG	4140
GCGCCCCGTC	TCTTGTCTCT	GCGGGTGGCT	GTCTCCGAGG	CGAGGAGGCC	TTCTTCCGCA	4200
GGTGCCCCGC	CCCGCTCACT	GTCTCTCTCC	CCCCACAGGT	TTTCCCCATG	ACACCACCTG	4260
GACGCTCTA	CCTCCGGAGG	GTGTGCAGCA	CCCCATCCT	CCTCCTCCTG	GGGCTGCTGC	4320
TGGCCCTGCC	GCCCGAGGCC	CAGGTGAGGC	AGCAGGAGAG	CGGGCCGTGG	GGGCAGCCTT	4380
CGCCAACTTT	GGGCCTCAGA	GCCTCTCTGA	CGCTCTTCTC	CCCTAGGGGC	TCCCTGGCGT	4440
CGGCCTCCCA	CCCTCAGCTG	CACAGCCTGC	CCATCAGCAC	CCCCCAAAGC	ACTTGGCCAG	4500
AGGCACCTTC	AAACCTGCCG	CTCACCTCGT	TGGTAAACAT	CCACCTGGCC	TCCCAGACCT	4560
GTAGCCCCCA	GTCTCTCTCC	TATGCCCCCT	CTTCAGGGAC	TGAAGCATCC	CTCCCCCCCCA	4620
TCTCCCCCCA	CCCCCTAAAT	GGAGGCATCC	CACCTCCGAC	TCCCCTCCAA	CCATCCCCCA	4680
GGAACCTCAGT	CCAGCACCCTG	CTTCCTCAGG	GATTGAGACC	TCCGACCCCC	AGGTCTTTGA	4740
CTCCCACCCC	CTCTGGCTCT	TCCTAGGAGA	CCCCAGACCC	CCGGACTCAC	TGCGCTGGAG	4800
AGCGAACACG	GATCGTGCCT	TCCTCCGCCA	TGGCTTCTTG	CTGAGCAACA	ACTCCCTGCT	4860
GGTCCCCACC	AGTGGCCTCT	ACTTTGTCTA	CTCCCAGGTC	GTCTTCTCCG	GGGAAGGCTG	4920
CTTCCCCAAG	GCCACCCCCA	CCCCCTCTTA	CCTGGCCCCAC	GAGGTCCAGC	TCTTCTCCTC	4980
CCAGTACCCC	TTCCACGTGC	CGCTCCTCAG	CGCTCAGAAG	TCCGTGTGCC	CCGGGCCACA	5040
GGGACCTTGG	GTGCGCTCTG	TGTACCAGGG	GGCTGTGTTT	CTGCTCACC	AGGGAGATCA	5100
GCTGTCCACA	CACACAGACG	GCACCCCCCA	CCTGCTCCTC	AGCCCCAGTA	GCGTCTTCTT	5160
TGGAGCCTTC	GCTCTATAGA	AGAATCCAGA	AAGAAAAAAA	TTGGTTTCAA	GGCCTTCTCC	5220
CCTTTTCACC	TCCCTTATGA	CCACTTCGGA				

CATGAGGGAC	TTTGAACGGA	TGACCGGAGC	GGTGTGGGGG	GGTTATTTAT	GAAGGGGAAA	5520
ATTAAATTAT	TTATTTATGG	AGGATGGAGA	GAAGGGAATC	ACAGAGGGAT	GTCAGAAGAG	5580
TGTGACACAT	GTGCCAAGA	GATAAAGTGA	CAGAAGGCAT	GGGCTCCAGA	TGACCCGGCC	5640
AGAGAGGGCA	AAGTGGCTCA	GGAAGGGGCT	GCTTGACTGG	AGGCTCATGA	GGAGACGGCT	5700
GACCCTCGAT	GAAACCAAT	AAAGCTCTTT	TCTCTGAAAT	GCTGTCTGCT	CGTATCTGTC	5760
ACTCGGGAGG	GGAGAATTCT	CCAGATGTCT	CTAAGGAGTG	GAGGGAGGAC	AGGAATCAGA	5820
GGGGACGGGA	GCTGTGGGTG	TGTGATGAGG	CCTAAGGGGC	TCAGGTGAGA	GATGGCGGCC	5880
TCAGGGTGAG	GGCAGCCAGA	CCCCTGCAGG	AGAAGCAGAT	GGTTCCTCTG	AGAAGACAAA	5940
GGAAGAGATG	CAGGGCCAAG	GTCTTGAGAA	CCGAGGCTGG	GGGTCGCCTG	GCAGATATGG	6000
CCACAGGTAG	AGGACAGAG	GATATGGGGT	GACAGGAGGC	TTCCCGGGAG	AAGGGAACAC	6060
ACTGAGGGGT	GTTCGGGATT	CTGAGGGAGG	AGCACGGGGA	CGCCCTGGGA	GACATGCCGT	6120
CCAGGGCCAT	GAGGAGTGGG	AGAGCCTCTG	AGGCTAGCGG	CTGGAGATAC	AGGGACATTT	6180
GAGGAGACAC	GGTCATGGCC	AGGAGCCGCG	AGGGCCTGGA	CAGTCTCTAG	GAATCTCGAA	6240
GAAGCAGGAA	TTCTTTGAGG	ATACGTGGCC	ACACAAAGGG	AGGCTGAGGT	GTGGGGACTT	6300
CATGCAGAAG	TCAGGGCCTC	ACATTCCCTT	GGAAGCCGAG	ACTGAAACCA	GCAGCAGAGT	6360
TTTGGTGAGT	TCCTGTGAGA	GTGAAAAGGAG	AAGGCCCGCC	ATGGTGGGTT	TGTGAATTCC	6420
CAGCCTGGCT	TCCTCTCCCT	CTGGGGCTGT	CCCAGGCCTG	TTCCTGCCGT	CCTCCCCCAG	6480
CCCGTGTAGG	GCCTCCAGCT	GCCCTTCTCC	CAGCTCCTCT	TCCCTCCAGG	AGACGAAACA	6540
TGGGTCTCAG	CACCCACGCG	GGTGTGCTCT	AAGTTTCTCT	TCCATTAAGA	ACTCAGCTTT	6600
CTGAAGCTCC	TCCCATTCCT	AGTTCTACCC	CTACCTGAGC	CTCGTTCCGA	AATCAGAGAG	6660
AAATAGAAGT	CATCCCCCAA	AGAAAAGGAA	TTTGTCCCCC	AAAGAAACAG	AACTTGTCCC	6720
CCAAAGAAAT	GGAAACAATG	GGAAATGGGA	GGCAGGGGGG	ACCTGGGGTC	CAGCCTCCAG	6780
GGTCTTACAC	ACAGAGCAGT	AACTGGCCCA	GCAAGCCAC	CTCAGGATCC	GGGCAGGGAG	6840
GGTAGGAAGT	ATCCCTGATG	CCTGGGTGTC	CCCAACTTTC	CAAACCGCCG	CCCCGCTAT	6900
GGAGATGAAA	CTAAGACAGA	AGGTGCAGGG	CCCCTACCG	CTTCTCCAG	ATGAGCTCAT	6960
GGGTTTCTCC	ACCAAGGAAAG	TTTTCCGCTG	GTTGAAAGAG	AGCCTCTCCC	CGCCCTCTTC	7020
TCACCCAGAG	CGTATAAATG	CAGCTGTTTG	CACACCCAGC	CAGCAGAAGC	TCCCAGAGTG	7080
AGGACACCAG	GGGACCAGCC	AGGAGAGAGA	CAAGCCATCT	CCAGGACCCC	CTAGAAATAA	7140
CCTCTCAGAA	GACACACCCC	GGAACAGGCA	GCCGGACGAC	TCTCTCCCTC	TCACACGCTG	7200
CCCCGGGGCG	CCACCATCTC	CCAGCTGGAC	CTGAGCCCCC	CTGAAAAAGA	CACCATGAGC	7260
ACTGAGAGCA	TGATCCGAGA	CGTGAGAGCTG	GCGGAGGAGG	CGCTCGCCAA	GAAGGCCGGG	7320
GGCCCCCAGG	GCTCCAGGAG	GTGCCTGTGC	CTCAGCCTCT	TCTCCTTCCT	CCTGGTGCBA	7380
GGAGCCACCA	CGCTCTTCTG	CCTACTGCAC	TTCGAGGTTA	TCGGCCCCCA	GAAGGAAGAG	7440
GTGAGCGCCT	GGCCAGCCTT	GGCTCATTCT	CCCACCCGGA	GAGAAATGGG	GAAGAAAGAG	7500
GGCCAGAGAC	GAGCTGGGGG	AAAGAAAGTGT	GCTGATGGGG	AGTGTGGGGA	GGAAATCATG	7560
GAGAAAGATG	GGGAGGCAGA	AGGAGACGTG	GAGAGAGATG	GGGGGAGAGA	GAGAAGGATG	7620
GAGAGAAATC	CGGTGGCCCC	GCCCTTGGAA	ATGCTCTCTA	AATATTTGTT	GCACGAATGA	7680
TGTAGTAAAG	AGGGACACCG	ATATAAGAG	AGATGAGTAG	ACAGACAAGG	GGTGTGGTAG	7740
AAAGATAGGG	AAAAAACAAAG	TGATCTGGAT	AAAGATAGTG	ACAGAGGAAG	AGGTAGAGGA	7800
GATAGGAAAG	AGAGATAAGG	AGAGAAGAAAG	GAAAGCGTGGG	TGTCTGGCAC	TGGAAGGCA	7860
CTCAATGAAG	GAGTTGTTGA	ATGGATGGGT	GGATGAGAAA	ATGGATGAGT	GGAGAGAAAA	7920
AACTAGACAT	CAGGGCAGAG	AGTACAAGCT	AGAGAAGCAG	GTGGCTGTTT	TCCCTTCAGA	7980
GGGGACTTAT	TCAAATCTAA	TTAATCCTTC	TTCTTCTCCC	CAACAGTTTC	CAGCTGGCCC	8040
CTTGAGCATC	AACCTCTGG	CCCAAGGACT	CAGTAAGTAT	CTCTAAAACC	TGTCTCTCAG	8100
TTCTGAGCTT	GGACAGGGGT	GGGGTTAGTG	CTGGGGTGGA	AGGAAGAAGG	GAAATTTAGG	8160
GTCTGGGTTT	GGCGGGGGGA	ATGCAGGTCA	AAGTAGTGAG	ATATTTTCTG	GGAAGTCTGA	8220
GGGTCTCATC	TTTTTCTTTT	CTCTTTCCTC	CTCAGGATCA	TCGTCTCAAA	CCTCAGATAA	8280
CCCCGTCGCC	CACGTGTAG	GTAAGATTTC	TGAGGATGTG	TCTGGCGGAT	GAAGAAATAG	8340
GCAGGACAGA	GAGGATAGAG	ATTTGGGGGC	TGAAGCCAGG	CTGAGGGTAG	CCAGAGCTTG	8400
GAGATAGTAT	GAGGAGGACT	CGCTGAGCTC	CAGGGGAGGA	TGGGGGATAC	TCAGAACTTG	8460
AGGAGGATAC	TCGGAACCTC	ATGGACAGAT	GGGATGTGGG	AAGACAGACC	GAGGGGACAG	8520
GAACCGGATG	TGGGGGGCGG	GCAGAACTCG	AGGGCCAGGA	TGTGGAGAGT	GGAACTGACA	8580
GGGTCACACT	GACTACCCCC	TCCCTCTTTG	TCTCCTCCCT	CCAGCCAATG	TCAAAGCCGA	8640
GGGACAGCTC	CAATGGCAGA	GTGGGTATGC	CAATGCCCTC	CTGGCCAACG	GCGTGAAGCT	8700
GAAAGACAAAC	CAGCTGGTGG	TGCCGACAGA	TGGGCTGTAC	CTCATCTACT	CCCAGGTCCT	8760
CTTCAGGGGC	CAAGGCTGCC	CTTCCACCAA	CGTTTTTCCT	ACTCACACCA	TCAGCCGCAT	8820

CGTTCCCTCC	CCTGTCCATC	CCTTTATTAT	TTTACTCCTT	CAGACCCCTT	CACGTCCTTC	9120
TGGTTTTAGAA	AGAGAATGAG	GGGCTGGGGA	CTGGGCTCCA	AGCTTAAAC	TTTAAACAAC	9180
AACAGCAACA	CTTAGAAATC	AGGGATTTCAG	GGATGTGTGG	CCTGGACAAC	CAGGCACTGA	9240
CCACCACCAA	GAATTGGAAC	TGGGGCTTCC	AGACTCGCTG	GGTCCCTTGG	GTTTGGATTTC	9300
CTGGATGCAA	CCTGGGACAT	CTGGAATGTG	GCTGCCAGGG	AAGCTTGGGT	TCCAATCGGA	9360
ATACTTCAGA	ACATTCCCTG	AGAAGATTTC	ACCTCAATCT	TGATGACTTT	TTAGGCTTCC	9420
CTTTCTTCCA	ATTTTCCAGA	CTTCCCTGGG	ATGGGGAGCC	CAGCCCCAAA	CCCCACAGGC	9480
CAGCTCCCTC	TTATTTATAT	TTGCACCTGG	CATTATTATT	TATTTATTTA	TTTATTATTT	9540
ATTTACTAGT	GAATGTATTT	ATTCAGGAGG	GCGAGGTGTC	CTGGGAGACC	CAGCATAAGG	9600
GCTGCCTTGG	TTCAGATGTG	TTTTCTGTGA	AAACGGAGCT	GAAGTGTAGG	TTGCTCCAC	9660
CTGGCCTCCT	AGCCTCTGTG	CCTCCTTTTG	CTTATGTTTT	TAAAAACAAA	TATTTATCTG	9720
ATCGAGTTGT	CTAAATAATG	CTGATTTGGT	GACTAACTTG	TCGCTACATC	GCTGAACCTC	9780
TGCTCCCCAG	GGGAGTTGTG	TCTGTAACCG	CCCTACTGGT	CAGTGGCGAG	AAATAAAAGC	9840
GTGCTTAGAA	AAGAAATCTG	GCCTCTTTCT	GCGACTGAAT	TCTGCATCTC	CTTGGGGGGG	9900
TGAGGCTGCT	CCCCAAAATT	CTTCTCCAC	CGGGCTTAGG	ATTCCTGGG	CTTCACTCCT	9960
GAGCTTGGAC	TGCCTGGCTC	AGGAGCCTCT	GCAAGAAACA	AAGCCCAGCC	AAACAGGTCC	10020
CTCCCCTAAG	AAAGGAACCT	GAAGGTAATT	ACCTCTCCCT	CAGGGTGTGG	GAATTTCCAA	10080
GTCTGGGAAT	TCCATCCAG	CTGGGGAAGT	CTGCAGTGCA	GGTGAGACTT	CCGGCTGAAA	10140
GAGCCAGGGA	GCGGCCAGAT	GCTCAGGTAC	GCTAACCAGA	GCCAAGGGAC	TTCCAGACAG	10200
TGAGGCAACT	GGGCTCCAAA	TAACCTGATC	CGGGGAATTC			10240

(2) INFORMATION FOR SEQ ID NO: 12:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1644 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 12:

CCTCAGCGAG	GACAGCAAGG	GACTAGCCAG	GAGGGAGAAC	AGAAACTCCA	GAACATCCTG	60
GAAATAGCTC	CCAGAAAAGC	AAGCAGCCAA	CCAGGCAGGT	TCTGTCCCTT	TCACTCACTG	120
GCCCAAGGCG	CCACATCTCC	CTCCAGAAAA	GACACCATGA	GCACAGAAAG	CATGATCCGC	180
GACGTGGAAC	TGGCAGAAGA	GGCACTCCCC	CAAAAGATGG	GGGGCTTCCA	GAAGTCCAGG	240
CGGTGCCTAT	GTCTCAGCCT	CTTCTCATTC	CTGCTTGTGG	CAGGGGCCAC	CACGCTCTTC	300
TGTCTACTGA	ACTTCGGGGT	GATCGGTCCC	CAAAGGGATG	AGAAGTTCCC	AAATGGCCTC	360
CCTCTCATCA	GTTCTATGGC	CCAGACCCCT	ACACTCAGAT	CATCTTCTCA	AAATTCGAGT	420
GACAAGCCTG	TAGCCACGCT	CGTAGCAAAC	CACCAAGTGG	AGGAGCAGCT	GGAGTGGCTG	480
AGCCAGCGCG	CCAACGCCCT	CCTGGCCAAC	GGCATGGATC	TCAAAGACAA	CCAACTAGTG	540
GTGCCAGCCG	ATGGGTTGTA	CCTTGTCTAC	TCCCAGGTTT	TCTTCAAGGG	ACAAGGCTGC	600
CCCGACTACG	TGCTCCTCAC	CCACACCGTC	AGCCGATTTG	CTATCTCATA	CCAGGAGAAA	660
GTCAACCTCC	TCTCTGCCGT	CAAGAGCCCC	TGCCCCAAGG	ACACCCCTGA	GGGGGCTGAG	720
CTCAAACCTT	GGTATGAGCC	CATATACCTG	GGAGGAGTCT	TCCAGCTGGA	GAAGGGGGAC	780
CAACTCAGCG	CTGAGGTCAA	TCTGCCCAAG	TACTTAGACT	TTGCGGAGTC	CGGGCAGGTC	840
TACTTTGGAG	TCATTGCTCT	GTGAAGGGAA	TGGGTGTTCA	TCCATTCTCT	ACCCAGCCCC	900
CACCTCGACC	CCTTACTCT	GACCCCTTTA	TTGTCTACTC	CTCAGAGCCC	CCAGTCTGTG	960
TCCTTCTAAC	TTAGAAAAGG	GATTATGGCT	CAGAGTCCAA	CTCTGTGCTC	AGAGCTTTCA	1020
ACAACACTCT	AGAAACACAA	GATGCTGGGA	CAGTGACCTG	GACTGTGGGC	CTCTCATGCA	1080
CCACCATCAA	GGACTCAAAT	GGGCTTTCCG	AATTCAGTGG	AGCCTCGAAT	GTCCATTCTC	1140
GAGTTCTGCA	AAGGGAGAGT	GGTCAGGTTG	CCTCTGTCTC	AGAATGAGGC	TGGATAAGAT	1200
CTCAGGCTTT	CCTACCTTCA	GACCTTTCCA	GACTCTTCCC	TGAGGTGCAA	TGCACAGCCT	1260
TCCTCACAGA	GCCAGCCCCC	CTCTATTTAT	ATTTGCACTT	ATTATTTATT	ATTTATTTAT	1320
TATTTATTTA	TTTGCTTATG	AATGTATTTA	TTTGGAAGGC	CGGGGTGTCC	TGGAGGACCC	1380
AGTGTGGGAA	GCTGTCTTCA	GACAGACATG	TTTTCTGTGA	AAACGGAGCT	GAGCTGTCCC	1440
CACCTGGCCT	CTCTACCTTG	TTGCCTCCTC	TTTTGCTTAT	GTTTAAACAA	AAATATTTAT	1500
CTAACCCAAT	TGTCTTAATA	ACGCTGATTT	GGTGACCAGG	CTGTCGCTAC	ATCACTGAAC	1560

CTCTGCTCCC CACGGGAGCC GTGACTGTAA TTGCCCTACA GTCAATTGAG AGAAATAAAG	1620
ATCGCTTAAA ATAAAAAACC CCCC	1644

(2) INFORMATION FOR SEQ ID NO: 13:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH:	1890 base pairs
(B) TYPE:	nucleic acid
(C) STRANDEDNESS:	single
(D) TOPOLOGY:	linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 13:

AAACAGAGAG	AGATAGAGAA	AGAGAAAGAC	AGAGGTGTTT	CCCTTAGCTA	TGGAAACTCT	60
ATAAGAGAGA	TCCAGCTTGC	CTCCTCTTGA	GCAGTCAGCA	ACAGGGTCCC	GTCCTTGACA	120
CCTCAGCCTC	TACAGGACTG	AGAAGAAGTA	AAACCGTTTG	CTGGGGCTGG	CCTGACTCAC	180
CAGCTGCCAT	GCAGCAGCCC	TTCAATTACC	CATATCCCCA	GATCTACTGG	GTGGACAGCA	240
GTGCCAGCTC	TCCCTGGGCC	CCTCCAGGCA	CAGTTCCTCC	CTGTCCAACC	TCTGTGCCCCA	300
GAAGGCCTGG	TCAAAGGAGG	CCACCACCAC	CACCGCCACC	GCCACCACTA	CCACCTCCGC	360
CGCCGCCGCC	ACCACTGCCT	CCACTACCGC	TGCCACCCCT	GAAGAAGAGA	GGGAACCACA	420
GCACAGGCCT	GTGTCTCCTT	GTGATGTTTT	TCATGGTTCT	GGTTGCCTTG	GTAGGATTGG	480
GCCTGGGGAT	GTTTCAGCTC	TTCCACCTAC	AGAAGGAGCT	GGCAGAACTC	CGAGAGTCTA	540
CCAGCCAGAT	GCACACAGCA	TCATCTTTGG	AGAAGCAAAT	AGGCCACCCC	AGTCCACCCC	600
CTGAAAAAAA	GGAGCTGAGG	AAAGTGGCCC	ATTTAACAGG	CAAGTCCAAC	TCAAGGTCCA	660
TGCCTCTGGA	ATGGGAAGAC	ACCTATGGAA	TTGTCTTGCT	TTCTGGAGTG	AAGTATAAGA	720
AGGGTGCCCT	TGTGATCAAT	GAAACTGGGC	TGTACTTTGT	ATATTCCAAA	GTATACTTCC	780
GGGGTCAATC	TTGCAACAAC	CTGCCCCTGA	GCCACAAGGT	CTACATGAGG	AACCTTAAGT	840
ATCCCCAGGA	TCTGGTGATG	ATGGAGGGGA	AGATGATGAG	CTACTGCACT	ACTGGGCAGA	900
TGTGGGCCCC	CAGCAGCTAC	CTGGGGGCAG	TGTTCAATCT	TACCAGTGCT	GATCATTTAT	960
ATGTCAACGT	ATCTGAGCTC	TCTCTGGTCA	ATTTTGAGGA	ATCTCAGACG	TTTTTCGGCT	1020
TATATAAGCT	CTAAGAGAAG	CACTTTGCGA	TTCTTTCCAT	TATGATTCTT	TGTTACAGGC	1080
ACCGAGAATG	TTGTATTTCAG	TGAGGGTCTT	CTTACATGCA	TTTGAGGTCA	AGTAAGAAGA	1140
CATGAACCAA	GTGGACCTTG	AGACCACAGG	GTTCAAAAATG	TCTGTAGCTC	CTCAACTCAC	1200
CTAATGTTTA	TGAGCCAGAC	AAATGGAGGA	ATATGACGGA	AGAACATAGA	ACTCTGGGCT	1260
GCCATGTGAA	GAGGGAGAAG	CATGAAAAAG	CAGCTACCCA	GGTGTCTTAC	ACTCATCTTA	1320
GTGCCTGAGA	GTATTTAGGC	AGATTGAAAA	GGACACCTTT	TAACCTACCT	CTCAAGGTGG	1380
GCCTTGCTAC	CTCAAGGGGG	ACTGTCTTTC	AGATACATGG	TTGTGACCTG	AGGATTTAAG	1440
GGATGGAAAA	GGAAGACTAG	AGGCTTGCCAT	AATAAGCTAA	AGAGGCTGAA	AGAGGCCAAT	1500
GCCCCACTGG	CAGCATCTTC	ACTTCTAAAT	GCATATCCTG	AGCCATCGGT	GAAACTAACA	1560
GATAAGCAAG	AGAGATGTTT	TGGGGACTCA	TTTCATTCCT	AACACAGCAT	GTGTATTTCC	1620
AGTGCCAAAT	GTAGGGGTGT	GTGTGTGTGT	GTGTGTGTGT	GTGTATGACT	AAAGAGAGAA	1680
TGTAGATATT	GTGAAGTACA	TATTAGGAAA	ATATGGGTTG	CATTGGGTCA	AGATTTTGAA	1740
TGCTTCCTGA	CAATCAACTC	TAATAGTGCT	TAAAAATCAT	TGATTGTCAG	CTACTAATGA	1800
TGTTTTCCTA	TAATATAATA	AATATTTATG	TAGATGTGCA	TTTTTGTGAA	ATGAAAACAT	1860
GTAATAAAAA	GTATATGTTA	GGATACAAAT				1890

(2) INFORMATION FOR SEQ ID NO: 14:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH:	1541 base pairs
(B) TYPE:	nucleic acid
(C) STRANDEDNESS:	single
(D) TOPOLOGY:	linear

267027 223630

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 14:

GGGTGTCTCA	CAGAGAAGCA	AAGAGAAGAG	AACAGGAGAA	ATGGTGTTC	CCTTGACTGC	60
GGAAACTTTA	TAAAGAAAAC	TTAGCTTCTC	TGGAGCAGTC	AGCGTCAGAG	TTCTGTCCCT	120
GACACCTGAG	TCTCCTCCAC	AAGGCTGTGA	GAAGGAAACC	CTTTCCTGGG	GCTGGGTGCC	180
ATGCAGCAGC	CCATGAATTA	CCCATGTCCC	CAGATCTTCT	GGGTAGACAG	CAGTGCCACT	240
TCATCTTGGG	CTCCTCCAGG	GTCAGTTTTT	CCCTGTCCAT	CTTGTGGGCC	TAGAGGGCCG	300
GACCAAAGGA	GACCGCCACC	TCCACCACCA	CCTGTGTCAC	CACTACCACC	GCCATCACAA	360
CCACTCCCAC	TGCCGCCACT	GACCCCTCTA	AAGAAGAAGG	ACCACAACAC	AAATCTGTGG	420
CTACCGGTGG	TATTTTTTCAT	GGTTCGTGGT	GCTCTGGTTG	GAATGGGATT	AGGAATGTAT	480
CAGCTCTTCC	ACCTGCAGAA	GGAACCTGGCA	GAACCTCCGT	AGTTCACCAA	CCAAAAGCCT	540
AAAGTATCAT	CTTTTGAAAA	GCAAATAGCC	AACCCACGTA	CACCCTCTGA	AAAAAAAGAG	600
CCGAGGAGTG	TGGCCCATTT	AACAGGGAAC	CCCCACTCAA	GGTCCATCCC	TCTGGAATGG	660
GAAGACACAT	ATGGAACCGC	TCTGATCTCT	GGAGTGAAGT	ATAAGAAAGG	TGGCCTTGTG	720
ATCAACGAAA	CTGGGTGTGA	CTTCGTGTAT	TCCAAAGTAT	ACTTCCGGGG	TCAGTCTTGC	780
AACAACCAGC	CCCTAAACCA	CAAGGTCTAT	ATGAGGAACT	CTAAGTATCC	TGAGGATCTG	840
GTGCTAATGG	AGGAGAAGAG	GTTGAACCTAC	TGCACACTG	GCCAGATATG	GGCCACACAG	900
AGCTACCTGG	GGGCAGTATT	CAATCTTACC	AGTGCTGACC	ATTTATATGT	CAACATATCT	960
CAACTCTCTC	TGATCAATTT	TGAGGAATCT	AAGACCTTTT	TCGGCTTGTA	TAAGCTTTAA	1020
AAGAAAAAGC	ATTTTAAAAAT	GATCTACTAT	TCTTTATCAT	GGGCACCAGG	AATATTGTCT	1080
TGAATGAGAG	TCTTCTTAAG	ACCTATTGAG	ATTAATTAAG	ACTACATGAG	CCACAAAGAC	1140
CTCATGACCG	CAAGGTCCAA	CAGGTCAGCT	ATCCTTCATT	TTCTCGAGGT	CCATGGAGTG	1200
GTCCTTAATG	CCTGCATCAT	GAGCCAGATG	GAAGGAGGTC	TGTGACTGAG	GGACATAAAG	1260
CTTTGGGCTG	CTGTGTAGCA	ATGCAGAGGC	ACAGAGAAAG	AACTGTCTGA	TGTTAAATGG	1320
CCAAGAGAAT	TTTAACCATT	GAAGAAGACA	CCTTTACACT	CACTTCCAGG	GTGGGTCTAC	1380
TTACTACCTC	ACAGAGGCCG	TTTTTGAGAC	ATAGTTGTGG	TATGAATATA	CAAGGGTGAG	1440
AAAGGAGGCT	CATTTGACTG	ATAAGCTAGA	GACTGAAAAA	AAGACAGTGT	CTCATTGGCA	1500
CCATCTTTAC	TGTTACCTGA	TGTTTTCTGA	GCCGACCTTT	G		1541

(2) INFORMATION FOR SEQ ID NO: 15:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 888 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 15:

GGCTGGTCCC	CTGACAGGTT	GAAGCAAGTA	GACGCCCAGG	AGCCCCGGGA	GGGGGCTGCA	60
GTTTCCTTCC	TTCCTTCTCG	GCAGCGCTCC	GCGCCCCCAT	CGCCCCCTCT	GCGCTAGCGG	120
AGGTGATCGC	CGCGGCGATG	CCGGAGGAGG	GTTCCGGCTG	CTCGGTGCGG	CGCAGGCCCT	180
ATGGGTGCGT	CCTGCGGGCT	GCTTTGGTCC	CATTGGTCGC	GGGCTTGGTG	ATCTGCCTCG	240
TGGTGTGCAT	CCAGCGCTTC	GCACAGGCTC	AGCAGCAGCT	GCCGCTCGAG	TCACTTGGGT	300
GGGACGTAGC	TGAGCTGCAG	CTGAATCACA	CAGGACCTCA	GCAGGACCCC	AGGCTATACT	360
GGCAGGGGGG	CCCAGCACTG	GGCCGCTCCT	TCCTGCATGG	ACCAGAGCTG	GACAAAGGGC	420
AGCTACGTAT	CCATCGTGAT	GGCATCTACA	TGGTACACAT	CCAGGTGACG	CTGGCCATCT	480
GCTCCTCCAC	GACGGCCTCC	AGGCACCACC	CCACCACCCT	GGCCGTGGGA	ATCTGCTCTC	540
CCGCCTCCCG	TAGCATCAGC	CTGCTGCGTC	TCAGCTTCCA	CCAAGGTTGT	ACCATTGCCT	600
CCCAGCGCCT	GACGCCCCTG	GCCCCAGGGG	ACACACTCTG	CACCAACCTC	ACTGGGACAC	660
TTTTGCCTTC	CCGAAACACT	GATGAGACCT	TCTTTGGAGT	GCAGTGGGGT	CGCCCCTGAC	720
CACTGCTGCT	GATTAGGGTT	TTTTAAATTT	TATTTTATTT	TATTTAAGTT	CAAGAGAAAA	780
AGTGTAACA	CAGGGGCCAC	CCGGGGTTGG	GGTGGGAGTG	TGGTGGGGGG	TAGTGGTGCG	840
AGGACAAGAG	AAGGCATTGA	GCTTTTTCTT	TCATTTTCCT	ATTAAAAA		888

(2) INFORMATION FOR SEQ ID NO: 16:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 1906 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 16:

CCAAGTCACA TGATTTCAGGA TTCAGGGGGA GAATCCTTCT TGGAACAGAG ATGGGCCCAG 60  
AACTGAATCA GATGAAGAGA GATAAGGTGT GATGTGGGGA AGACTATATA AAGAATGGAC 120  
CCAGGGCTGC AGCAAGCACT CAACGGAATG GCCCTCCTG GAGACACAGC CATGCATGTG 180  
CCGGCGGGCT CCGTGGCCAG CCACCTGGGG ACCACGAGCC GCAGCTATTT CTATTTGACC 240  
ACAGCCACTC TGGCTCTGTG CCTTGCTCTC ACGGTGGCCA CTATTATGGT GTTGGTCGTT 300  
CAGAGGACGG ACTCCATTCC CAACTCACCT GACAACGTCC CCTCAAAGG AGGAAATTGC 360  
TCAGAAGACC TCTTATGTAT CCTGAAAAGA GCTCCATTCA AGAAGTCATG GGCTACCTC 420  
CAAGTGGCAA AGCATCTAAA CAAAACCAAG TTGCTTTGGA ACAAAGATGG CATTCTCCAT 480  
GGAGTCAGAT ATCAGGATGG GAATCTGGTG ATCCAATTCC CTGGTTTGTA CTTTCATCATT 540  
TGCCAAGTGC AGTTTCTTGT ACAATGCCCA AATAATTCTG TCGATCTGAA GTTGGAGCTT 600  
CTCATCAACA AGCATATCAA AAAACAGGCC CTGGTGACAG TGTGTGAGTC TGAATGCAA 660  
ACGAAACACG TATACCAGAA TCTCTCTCAA TTCTTGCTGG ATTACCTGCA GGTCAACACC 720  
ACCATATCAG TCAATGTGGA TACATTCCAG TACATAGATA CAAGCACCTT TCCTCTTGAG 780  
AATGTGTTGT CCATCTTCTT ATACAGTAAT TCAGACTGAA CAGTTTCTCT TGGCCTTCAG 840  
GAAGAAAGCG CCTCTCTACC ATACAGTATT TCATCCCTCC AAACACTTGG GCAAAAAGAA 900  
AACTTTAGAC CAAGACAAAC TACACAGGGT ATTAAGTAGT ATACTTCTCC TTCTGTCTCT 960  
TGGAAAGATA CAGCTCCAGG GTTAAAAAGA GAGTTTTTAG TGAAGTATCT TTCAGATAGC 1020  
AGGCAGGGAA GCAATGTAGT GTGGTGGGCA GAGCCCCACA CAGAATCAGA AGGGATGAAT 1080  
GGATGTCCCA GCCCAACCAC TAATTCACTG TATGGTCTTG ATCTATTTCT TCTGTTTTGA 1140  
GAGCCTCCAG TTAAGTGGG GCTTCAGTAC CAGAGCAGCT AGCAACTCTG CCTAATGGG 1200  
AAATGAAGGG GAGCTGGGTG TGAGTGTTTA CACTGTGCCC TTCACGGGAT ACTTCTTTTA 1260  
TCTGCAGATG GCCTAATGCT TAGTTGTCCA AGTCGCGATC AAGGACTCTC TCACACAGGA 1320  
AACTTCCCTA TACTGGCAGA TACACTGTG ACTGAACCAT GCCCAGTTA TGCCTGTCTG 1380  
ACTGTCACTC TGGCACTAGG AGGCTGATCT TGTACTCCAT ATGACCCAC CCCTAGGAAC 1440  
CCCCAGGGAA AACCAGGCTC GGACAGCCCC CTGTTCCCTGA GATGGAAAAG ACAAATTTAA 1500  
TACACCACCA CAATGGAAAA CAAGTTCAAA GACTTTTACT TACAGATCCT GGACAGAAAG 1560  
GGCATAATGA GTCTGAAGGG CAGTCCTCCT TCTCCAGGTT ACATGAGGCA GGAATAAGAA 1620  
GTCAGACAGA GACAGCAAGA CAGTTAACAA CGTAGGTAAA GAAATAGGGT GTGGTCACTC 1680  
TCAATTCACT GGCAAATGCC TGAATGGTCT GTGTGAAGGA AGCAACAGAG AAGTGGGGAA 1740  
TCCAGTCTGC TAGGCAGGAA AGATGCCCTCT AAGTTCCTGT CTCTGGCCAG AGGTGTGGTA 1800  
TAGAACCAGA AACCATATC AAGGGTGACT AAGCCCGGCT TCCGGTATGA GAAATTAAAC 1860  
TTGTATACAA AATGGTTGCC AAGGCAACAT AAAATTATAA GAATTC 1906

(2) INFORMATION FOR SEQ ID NO: 17:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 1619 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 17:

GTCATGGAAT ACGCCTCTGA CGCTTCACTG GACCCCGAAG CCCCCTGGCC TCCCGCGCCC 60  
CGCGCTCGCG CCTGCCGCGT ACTGCCTTGG GCCCTGGTCG CGGGGCTGCT GCTGCTGCTG 120  
CTGCTCGCTG CCGCTGCGC CGTCTTCTC GCCTGCCCTT GGGCCGTGTC CGGGGCTCGC 180  
GCCTCGCCCG GCTCCGCGGC CAGCCCGAGA CTCGCGAGG GTCCCGAGCT TTCGCGGAC 240

GATCCCGCCG	GCCTCTTGGA	CCTGCGGCAG	GGCATGTTTG	CGCAGCTGGT	GGCCCAAAAT	300
GTTCTGCTGA	TCGATGGGCC	CCTGAGCTGG	TACAGTGACC	CAGGCCTGGC	AGGCGTGTCC	360
CTGACGGGGG	GCCTGAGCTA	CAAAGAGGAC	ACGAAGGAGC	TGGTGGTGGC	CAAGGCTGGA	420
GTCTACTATG	TCTTCTTTCA	ACTAGAGCTG	CGGCGCGTGG	TGGCCGGCGA	GGGCTCAGGC	480
TCCGTTTCAC	TTGCGCTGCA	CCTGCAGCCA	CTGCGCTCTG	CTGCTGGGGC	CGCCGCCCTG	540
GCTTTGACCG	TGGACCTGCC	ACCCGCCCTC	TCCGAGGCTC	GGAACCTCGC	CTTCGGTTTC	600
CAGGGCCGCT	TGCTGCACCT	GAGTGCCGGC	CAGCGCCTGG	GCGTCCATCT	TCACACTGAG	660
GCCAGGGCAC	GCCATGCCTG	GCAGCTTACC	CAGGGCGCCA	CAGTCTTGGG	ACTCTTCCGG	720
GTGACCCCGG	AAATCCGAGC	CGGACTCCCT	TCACCGAGGT	CGGAATAACG	CCCAGCCTGG	780
GTGCAGCCCA	CCTGGACAGA	GTCCGAATCC	TACTCCATCC	TTCATGGAGA	CCCCTGGTGC	840
TGGGTCCCTG	CTGCTTTCTC	TACCTCAAGG	GGCTTGGCAG	GGGTCCCTGC	TGCTGACCTC	900
CCCTTGAGGA	CCCTCCTCAC	CCACTCCTTC	CCCAAGTTGG	ACCTTGATAT	TTATTCTGAG	960
CCTGAGCTCA	GATAATATAT	TATATATATT	ATATATATAT	ATATATTTCT	ATTTAAAGAG	1020
GATCCTGAGT	TTGTGAATGG	ACTTTTTTAG	AGGAGTTGTT	TTGGGGGGGG	GGTCTTCGAC	1080
ATTGCCGAGG	CTGGTCTTGA	ACTCCTGGAC	TTAGACGATC	CTCCTGCCTC	AGCCTCCCAA	1140
GCAACTGGGA	TTCATCCTTT	CTATTAATTC	ATTGTACTTA	TTTGCTTATT	TGTGTGTATT	1200
GAGCATCTGT	AATGTGCCAG	CATTGTGCCC	AGGCTAGGGG	GCTATAGAAA	CATCTAGAAA	1260
TAGACTGAAA	GAAATCTGA	GTTATGGTAA	TACGTGAGGA	ATTTAAAGAC	TCATCCCCAG	1320
CTCCACCTC	CTGTGTGATA	CTTGGGGGCT	AGCTTTTTTC	TTTCTTTCTT	TTTTTGTAGA	1380
TGGTCTTGT	CTGTCAACCA	GGCTAGAATG	CAGCGGTGCA	ATCATGAGTC	AATGCAGCCT	1440
CCAGCCTCGA	CCTCCCGAGG	CTCAGGTGAT	CCTCCCATCT	CAGCCTCTCG	AGTAGCTGGG	1500
ACCACAGTTG	TGTGCCACCA	CACTTGGCTA	ACTTTTTAAT	TTTTTTGCGG	AGACGGTATT	1560
GCTATGTTGC	CAAGGTTGTT	TACATGCCAG	TACAATTTAT	AATAAACACT	CATTTTTTCC	1619

(2) INFORMATION FOR SEQ ID NO: 18:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1239 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 18:

AGCCTATAAA	GCACGGGCAC	TGGCGGGAGA	CGTGCACTGA	CCGACCGTGG	TAATGGACCA	60
GCACACACTT	GATGTGGAGG	ATACCGCGGA	TGCCAGACAT	CCAGCAGGTA	CTTCGTGCCC	120
CTCGGATGCG	GCGCTCCTCA	GAGATAACCG	GCTCCTCGCG	GACGCTGCGC	TCCTCTCAGA	180
TACTGTGCGC	CCCACAAATG	CCGCGCTCCC	CACGGATGCT	GCCTACCCTG	CGGTTAATGT	240
TCGGGATCGC	GAGGCCGCGT	GGCCGCTGCG	ACTGAACTTC	TGTTCCCGCC	ACCCAAAGCT	300
CTATGGCCTA	GTCGCTTTGG	TTTTGCTGCT	TCTGATCGCC	GCCTGTGTTC	CTATCTTCAC	360
CCGCACCGAG	CCTCGGCCAG	CGCTCACAAT	CACCACCTCG	CCCAACCTGG	GTACCCGAGA	420
GAATAATGCA	GACCAGGTCA	CCCCTGTTTC	CCACATTGGC	TGCCCCAACA	CTACACAACA	480
GGGCTCTCCT	GTGTTTCGCCA	AGCTACTGGC	TAAAAACCAA	GCATCGTTGT	GCAATACAAC	540
TCTGAACCTG	CACAGCCAAG	ATGGAGCTGG	GAGCTCATA	CTATCTCAAG	GTCAGAGGTA	600
CGAAGAAGAC	AAAAAGGAGT	TGGTGGTAGA	CAGTCCCGGG	CTCTACTACG	TATTTTTTGA	660
ACTGAAGCTC	AGTCCAACAT	TCACAAACAC	AGGCCACAAG	GTGCAGGGCT	GGGTCTCTCT	720
TGTTTTGCAA	GCAAAGCCTC	AGGTAGATGA	CTTTGACAAC	TTGGCCCTGA	CAGTGGAAC	780
GTTCCCTTGC	TCCATGGAGA	ACAAGTTAGT	GGACCGTTCC	TGGAGTCAAC	TGTTGCTCCT	840
GAAGGCTGGC	CACCGCCTCA	GTGTGGGTCT	GAGGGCTTAT	CTGCATGGAG	CCAGGATGCG	900
ATACAGAGAC	TGGGAGCTGT	CTTATCCCAA	CACCACCAGC	TTTGGACTCT	TTCTTGTGAA	960
ACCCGACAAC	CCATGGGAAT	GAGAACTATC	CTTCTTGTGA	CTCCTAGTTG	CTAAGTCCTC	1020
AAGCTGCTAT	GTTTTATGGG	GTCTGAGCAG	GGGTCCCTTC	CATGACTTTC	TCTTGCTTTT	1080
AACTGGACTT	GGTATTTATT	CTGAGCATAG	CTCAGACAAG	ACTTTATATA	ATTCACCTAG	1140
TAGCATTAGT	AAACTGCTGG	GCAGCTGCTA	GATAAAAAAA	AATTTCTAAA	TCAAAGTTTA	1200
TATTTATATT	AATATATAAA	AATAAATGTG	TTTGTAAAT			1239

(2) INFORMATION FOR SEQ ID NO: 19:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 606 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 19:

ATGATCGAAA CATAACAACCA AACTTCTCCC CGATCTGCGG CCACTGGACT GCCCATCAGC 60  
ATGAAAATTT TTATGTATTT ACTTACTGTT TTTCTTATCA CCCAGATGAT TGGGTCAGCA 120  
CTTTTTGCTG TGTATCGCTT CGCACAGGCT TTTGAAATGC AAAAAGGTGA TCAGAATCCT 180  
CAAATTGCGG CACATGTCAT AAGTGAGGCC AGCAGTAAAA CAACATCTGT GTTACAGTGG 240  
GCTGAAAAAG GATACTACAC CATGAGCAAC AACTTGGTAA CCCTGGAAAA TGGGAAACAG 300  
CTGACCGTTA AAAGACAAGG ACTCTATTAT ATCTATGCCC AAGTCACCTT CTGTTCCAAT 360  
CGGGAAGCTT CGAGTCAAGC TCCATTATA GCCAGCCTCT GCCTAAAGTC CCCCGGTAGA 420  
TTCGAGAGAA TCTTACTCAG AGCTGCAAT ACCCACAGTT CCGCCAAACC TTGCGGGCAA 480  
CAATCCATTC ACTTGGGAGG AGTATTTGAA TTGCAACCAG GTGCTTCGGT GTTTGTCAAT 540  
GTGACTGATC CAAGCCAAGT GAGCCATGGC ACTGGCTTCA CGTCCTTTGG CTTACTCAAA 600  
CTCTGA 606

(2) INFORMATION FOR SEQ ID NO: 20:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 783 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 20:

ATGATCGAAA CATAACAACCA AACTTCTCCC CGATCTGCGG CCACTGGACT GCCCATCAGC 60  
ATGAAAATTT TTATGTATTT ACTTACTGTT TTTCTTATCA CCCAGATGAT TGGGTCAGCA 120  
CTTTTTGCTG TGTATCTTCA TAGAAGATTG GATAAGGTCG AAGAGGAAGT AAACCTTCAT 180  
GAAGATTTTG TATTCAATAA AAAGCTAAAG AGATGCAACA AAGGAGAAGG ATCTTTATCC 240  
TTGCTGAAC TGTAGGAGAT GAGAAGGCAA TTTGAAGACC TTGTCAAGGA TATAACGTTA 300  
AACAAAGAAG AGAAAAAGA AAACAGCTTT GAAATGCAAA AAGGTGATCA GAATCCTCAA 360  
ATTGCGGCAC ATGTCATAAG TGAGGCCAGC AGTAAAACAA CATCTGTGTT ACAGTGGGCT 420  
GAAAAAGGAT ACTACACCAT GAGCAACAAC TTGGTAACCC TGGAAAATGG GAAACAGCTG 480  
ACCGTTAAAA GACAAGGACT CTATTATATC TATGCCCAAG TCACCTTCTG TTCCAATCGG 540  
GAAGCTTCGA GTCAAGCTCC ATTTATAGCC AGCCTCTGCC TAAAGTCCCC CGGTAGATTC 600  
GAGAGAATCT TACTCAGAGC TGCAAATACC CACAGTTCCG CCAAACCTTG CGGGCAACAA 660  
TCCATTCACT TGGGAGGAGT ATTTGAATTG CAACCAGGTG CTTCGGTGTT TGTCAATGTG 720  
ACTGATCCAA GCCAAGTGAG CCATGGCACT GGCTTCACGT CCTTTGGCTT ACTCAAACCT 780  
TGA 783

(2) INFORMATION FOR SEQ ID NO: 21:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 558 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear



(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 21:

CTGCTGCACT	TCGGGGTAAT	CGGCCCCCAG	AGGGAAGAGC	AGTCCCCAGG	TGGCCCCCTCC	60
ATCAACAGCC	CTCTGGTTCA	AACACTCAGG	TCCTCTTCTC	AAGCCTCAAG	TAACAAGCCG	120
GTAGCCACG	TTGTAGCCGA	CATCAACTCT	CCGGGGCAGC	TCCGGTGGTG	GGACTCGTAT	180
GCCAATGCCC	TCATGGCCAA	CGGTGTGAAG	CTGGAAGACA	ACCAGCTGGT	GGTGCCTGCT	240
GACGGGCTTT	ACCTCATCTA	CTCACAGGTC	CTCTTCAGGG	GCCAAGGCTG	CCCTTCCACC	300
CCCTTGTTCC	TCACCCACAC	CATCAGCCGC	ATTGCAGTCT	CCTACCAGAC	CAAGGTCAAC	360
ATCCTGTCTG	CCATCAAGAG	CCCTTGCCAC	AGGGAGACCC	CAGAGTGGGC	TGAGGCCAAG	420
CCCTGGTACG	AACCCATCTA	CCAGGGAGGA	GTCTTCCAGC	TGGAGAAGGG	AGATCGCCTC	480
AGTGCTGAGA	TCAACCTGCC	GGACTACCTG	GACTATGCCG	AGTCCGGGCA	GGTCTACTTT	540
GGGATCATTG	CCCTGTGA					558

(2) INFORMATION FOR SEQ ID NO: 22:

(i) SEQUENCE CHARACTERISTICS:

(A)	LENGTH:	1783 base pairs
(B)	TYPE:	nucleic acid
(C)	STRANDEDNESS:	single
(D)	TOPOLOGY:	linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 22:

CAAGTCACAT	GATCCAGGAT	GCAGGGGAAA	ATCCTTCTTG	GAACAGAGCT	GGGTACAGAA	60
CCGAATCAGA	TGAGGAGAGA	TAAGGTGTGA	TGTGGGACAG	ACTATATAAA	GCATGGAGCC	120
AGGGCTGCAA	CAAGCAGGCA	GCTGTGGGGC	TCCTTCCCCT	GACCCAGCCA	TGCAGGTGCA	180
GCCCCGGCTCG	GTAGCCAGCC	CCTGGAGAAG	CACGAGGCC	TGGAGAAGCA	CAAGTCGCAG	240
CTACTTCTAC	CTCAGCACCA	CCGCACTGGT	GTGCCTTGTT	GTGGCAGTGG	CGATCATTCT	300
GGTACTGGTA	GTCCAGAAAA	AGGACTCCAC	TCCAAATACA	ACTGAGAAGG	CCCCCTTAA	360
AGGAGGAAAT	TGCTCAGAGG	ATCTCTTCTG	TACCCTGAAA	AGTACTCCAT	CCAAGAAGTC	420
ATGGGCCTAC	CTCCAAGTGT	CAAAGCATCT	CAACAATACC	AAACTGTCAT	GGAACGAAGA	480
TGGCACCATC	CACGGACTCA	TATACCAGGA	CGGGAACCTG	ATAGTCCAAT	TCCCTGGCTT	540
GTACTTCATC	GTTTGCCAAC	TGCAGTTCCT	CGTGCACTGC	TCAAATCATT	CTGTGGACCT	600
GACATTGCAG	CTCCTCATCA	ATTCCAAGAT	CAAAAAGCAG	ACGTTGGTAA	CAGTGTGTGA	660
GTCTGGAGTT	CAGAGTAAGA	ACATCTACCA	GAATCTCTCT	CAGTTTTTGC	TGCATTACTT	720
ACAGTCTCAAC	TCTACCATAT	CAGTCAGGGT	GGATAATTTT	CAGTATGTGG	ATACAAACAC	780
TTTCCCTCTT	GATAATGTGC	TATCCGTCTT	CTTATATAGT	AGCTCAGACT	GAATAGTTGT	840
TCTTAACCTT	TATGAAAATG	CTGTCTACCA	TACAGTACTT	CATCTGTCCA	AACATGGGCC	900
AAAGAAAATA	TTAGGACAAC	TCAAACTAAG	CATGTGAGTT	AGTGCACTTC	TCTTTCTGTC	960
CTTTGGAAAA	ATACAAACCC	AGGATTTAGA	AAGTGGAGTC	TCCTTCAGAT	GCACAAACAG	1020
GAAAGAATGT	GATATGTGCA	CAGAGACCTA	CTTGGGCACT	AGAAGGGGTG	TGAGTTGTCC	1080
CAGTATAACC	ACTAATTAC	TGACCTTGAG	CCATTTTTCC	TTCCCCCTGG	AACTTGGGGT	1140
CTGAATCTGG	AAAAGTAGGA	GATGAGATTT	ACATTTCCCC	AATATTTTCT	TCAACTCAGA	1200
AGACGAGACT	GTGGAGCTGA	GCTCCCTACA	CAGATGAAGG	CCTCCCATGG	CATGAGGAAA	1260
ATGATGGTAC	CAGTAATGTC	TGTCTGACTG	TCATCTCAGC	AAGTCCTAAG	GACTTCCATG	1320
CTGCCCTTGT	GAAAGATACT	CTAACCTCTT	GTAATGGGCA	AAGTGATCCT	GTCTCTCACT	1380
GAGGGAGAGTA	GCTGCTGCCA	TCTCCTGAGA	CATACATGGA	GACATTTTCT	GCCCAAATTC	1440
CATTCTGTGT	GCTGTTTTTA	AGTATTTCCC	CAAAAGTTCT	TGACAATGAG	AACTTTGAAT	1500
GTGGGAAGAG	CTTCTGGACA	GCAAACATTA	ACAGCTTCTC	CTGACCAGAG	AGACCATGCA	1560
AGCTTGGTCT	TAGACCCATC	AAGCTTGAGG	TTTCTACATT	GTGGGAGACA	GACTTTTGAC	1620
AAACCATTTG	AGTTGATGTC	TGGGCCCCTG	GGAGTTCTCC	TTCAGTAAGG	AGAGCAAGCC	1680
GTTCTAGTGC	TGTGTCAGAG	GATGGAGTAA	AATAGACACT	TTTCTGAAGG	AAAGGAGAAC	1740
AAAGTTCCAG	AAAAAGGCTA	GAAAATGTTT	AAAAAGAAAA	AAA		1783

(2) INFORMATION FOR SEQ ID NO: 23:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 1047 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 23:

AGAGAGCGCT GGGAGCCGGA GGGGAGCGCA GCGAGTTTTG GCCAGTGGTC GTGCAGTCCA 60  
AGGGGCTGGA TGGCATGCTG GACCCAAGCT CAGCTCAGCG TCCGGACCCA ATAACAGTTT 120  
TACCAAGGGA GCAGCTTTCT ATCCTGGCCA CACTGAGGTG CATAGCGTAA TGTCCATGTT 180  
GTTCTACACT CTGATCACAG CTTTCTGAT CGGCATACAG GCGGAACCAC ACTCAGAGAG 240  
CAATGTCCCT GCAGGACACA CCATCCCCCA AGTCCACTGG ACTAAACTTC AGCATTCCCT 300  
TGACACTGCC CTTTCGCAGAG CCCGCAGCGC CCCGGCAGCG GCGATAGCTG CACGCGTGGC 360  
GGGGCAGACC CGCAACATTA CTGTGGACCC CAGGCTGTTT AAAAAGCGGC GACTCCGTTT 420  
ACCCCGTGTG CTGTTTAGCA CCCAGCCTCC CCGTGAAGCT GCAGACACTC AGGATCTGGA 480  
CTTCGAGGTC GGTGGTGTG CCCCCTTCAA CAGGACTCAC AGGAGCAAGC GGTCATCATC 540  
CCATCCCATC TTCCACAGGG GCGAATTCTC GGTGTGTGAC AGTGTGAGCG TGTGGGTTGG 600  
GGATAAGACC ACCGCCACAG ACATCAAGGG CAAGGAGGTG ATGGTGTGG GAGAGGTGAA 660  
CATTAACAAC AGTGTATTCA AACAGTACTT TTTTGAGACC AAGTGCCGGG ACCCAAATCC 720  
CGTTGACAGC GGGTGCCGGG GCATTGACTC AAAGCACTGG AACTCATATT GTACCACGAC 780  
TCACACCTTT GTCAAGGCGC TGACCATGGA TGGCAAGCAG GCTGCCTGGC GGTTTATCCG 840  
GATAGATACG GCCTGTGTGT GTGTGCTCAG CAGGAAGGCT GTGAGAAGAG CCTGACCTGC 900  
CGACACGCTC CCTCCCCCTG CCCCTTCTAC ACTCTCCTGG GCCCCCTCCT ACCTCAACCT 960  
GTAAATTATT TTAAATTATA AGGACTGCAT GGTAAATTTAT AGTTTATACA GTTTTAAAGA 1020  
ATCATTATTT ATTAAATTTT TGGAAGC 1047

(2) INFORMATION FOR SEQ ID NO: 24:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 1176 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 24:

GAGCGCCTGG AGCCGGAGGG GAGCGCATCG AGTGACTTTG GAGCTGGCCT TATATTTGGA 60  
TCTCCCGGGC AGCTTTTTTG AAACCTCCTAG TGAACATGCT GTGCCTCAAG CCAGTGAAAT 120  
TAGGCTCCCT GGAGGTGGGA CACGGGCAGC ATGGTGGAGT TTTGGCCTGT GGTCTGTCAG 180  
TCCAGGGGGC TGGATGGCAT GCTGGACCCA AGCTCACCTC AGTGTCTGGG CCCAATAAAG 240  
GTTTTGCCAA GGACGCAGCT TTCTATACTG GCCGCAGTGA GGTGCATAGC GTAATGTCCA 300  
TGTTGTTCTA CACTCTGATC ACTGCGTTTT TGATCGGCGT ACAGGCAGAA CCGTACACAG 360  
ATAGCAATGT CCCAGAAGGA GACTCTGTCC CTGAAGCCCA CTGGACTAAA CTTCAGCATT 420  
CCCTTGACAC AGCCCTCCGC AGAGCCCACA GTGCCCTTAC TGCACCAATA GCTGCCCGAG 480  
TGACAGGGCA GACCCGCAAC ATCACTGTAG ACCCCAGACT GTTTAAGAAA CGGAGACTCC 540  
ACTCACCCCG TGTGCTGTTT AGCACCCAGC CTCCACCCAC CTCTTCAGAC ACTCTGGATC 600  
TAGACTTCCA GGCCCATGGT ACAATCCCTT TCAACAGGAC TCACCGGAGC AAGCGTCAT 660  
CCACCCACCC AGTCTTCCAC ATGGGGGAGT TCTCAGTGTG TGACAGTGTG AGTGTGTGGG 720  
TTGAGATAAA GACCACAGCC ACAGACATCA AGGGCAAGGA GGTGACAGTG CTGGCCGAGG 780  
TGAACATTAA AACACAGTGA TTCAGACAGT ACTTTTTTGA GACCAAGTGC CGAGCCTCCA 840  
ATCCTGTTGA GAGTGGGTGC CGGGGCATCG ACTCCAAACA CTGGAAGTCA TACTGCACCA 900  
CGACTCACAC CTTCTGCAAG GCGTTGACAA CAGATGAGAA GCAGGCTGCC TGGAGGTTCA 960  
TCCGATAGA CACAGCCTGT GTGTGTGTGC TCAGCAGGAA GGCTACAAGA AGAGGCTGAC 1020

TTGCCTGCAG	CCCCCTTCCC	CACCTGCCCC	CTCCACACTC	TCTTGGGCCC	CTCCCTACCT	1080
CAGCCTGTAA	ATTATTTTAA	ATTATAAGGA	CTGCATGATA	ATTTATCGTT	TATACAATTT	1140
TAAAGACATT	ATTTATTAAA	TTTTCAAAGC	ATCCTG			1176

(2) INFORMATION FOR SEQ ID NO: 25:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH:	1623 base pairs
(B) TYPE:	nucleic acid
(C) STRANDEDNESS:	single
(D) TOPOLOGY:	linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 25:

TCAGAGTCCT	GTCCTTGACA	CTTCAGTCTC	CACAAGACTG	AGAGGAGGAA	ACCCTTTCCT	60
GGGGCTGGGT	GCCATGCAGC	AGCCCGTGAA	TTACCCATGT	CCCCAGATCT	ACTGGGTAGA	120
CAGCAGTGCC	ACTTCTCCTT	GGGCTCCTCC	AGGGTCAGTT	TTTTCTTGTC	CATCCTCTGG	180
GCCTAGAGGG	CCAGGACAAA	GGAGACCACC	GCCTCCACCA	CCACCTCCAT	CACCACTACC	240
ACCGCCTTCC	CAACCACCCC	CGCTGCCTCC	ACTAAGCCCT	CTAAAGAAGA	AGGACAACAT	300
AGAGCTGTGG	CTACCGGTGA	TATTTTTCAT	GGTGCTGGTG	GCTCTGGTTG	GAATGGGGTT	360
AGGAATGTAT	CAACTCTTTC	ATCTACAGAA	GGAAGTGGCA	GAAGTCCGTG	AGTTCACCAA	420
CCACAGCCTT	AGAGTATCAT	CTTTTGAAAA	GCAAGTAGCC	AACCCGCTCA	CACCTCTCTGA	480
AACCAAAAAG	CCAAGGAGTG	TGGCCCACTT	AACAGGGAAC	CCCCGCTCAA	GGTCCATCCC	540
TCTGGAATGG	GAAGACACAT	ATGGAACTGC	TTTGATCTCT	GGAGTGAAGT	ATAAGAAAGG	600
CGGCCTTGTG	ATCAATGAGG	CTGGGTTGTA	CTTCGTATAT	TCCAAAGTAT	ACTTCCGGGG	660
TCAGTCTTGC	AACAGCCAGC	CCCTAAGCCA	CAAGGTCTAT	ATGAGGAACT	TTAAGTATCC	720
TGGGGATCTG	GTGCTAATGG	AGGAGAAGAA	GTTGAATTAC	TGCACTACTG	GCCAGATATG	780
GGCCCACAGC	AGCTACCTAG	GGGCAGTATT	TAATCTTACC	GTTGCTGACC	ATTTATATGT	840
CAACATATCT	CAACTCTCTC	TGATCAATTT	TGAGGAATCT	AAGACCTTTT	TTGGCTTATA	900
TAAGCTTTAA	AGGAAAAAGC	ATTTTAGAAT	GATCTATTAT	TCTTTATCAT	GGATGCCAGG	960
AATATTGTCT	TCAATGAGAG	TCTTCTTAAG	ACCAATTGAG	CCACAAAGAC	CACAAGGTCC	1020
AACAGGTCAG	CTACCTTCA	TTTTCTAGAG	GTCCATGGAG	TGGTCCTTAA	TGCCTGCATC	1080
ATGAGCCAGA	TGGGAAGAAG	ACTGTTCCCTG	AGGAACATAA	AGTTTGGGGC	TGCTGTGTGG	1140
CAATGCAGAG	GCAAAGAGAA	GGAACTGTCT	GATGTTAAAT	GGCCAAGAGC	ATTTTAGCCA	1200
TTGAAGAAAA	AAAAAACCTT	TAAACTCACC	TTCCAGGGTG	GGTCTACTTG	CTACCTCACA	1260
GGAGGCCGTC	TTTTAGACAC	ATGGTTGTGG	TATGACTATA	CAAGGGTGAG	AAAGGATGCT	1320
AGGTTTCATG	GATAAGCTAG	AGACTGAAAA	AAGCCAGTGT	CCCATTTGCA	TCATCTTTAT	1380
TTTTAACTGA	TGTTTTCTGA	GCCCACCTTT	GATGCTAACA	GAGAAATAAG	AGGGGTGTTT	1440
GAGGCACAAG	TCATTCTCTA	CATAGCATGT	GTACCTCCAG	TGCAATGATG	TCTGTGTGTG	1500
TTTTTATGTA	TGAGAGTAGA	GCGATTCTAA	AGAGTCACAT	GAGTACAACG	CGTACATTAC	1560
GGAGTACATA	TTAGAAACGT	ATGTGTTACA	TTTGATGCTA	GAATATCTGA	ATGTTTCTTG	1620
CTA						1623

(2) INFORMATION FOR SEQ ID NO: 26:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH:	28 base pairs
(B) TYPE:	nucleic acid
(C) STRANDEDNESS:	single
(D) TOPOLOGY:	linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 26:

GTTAAGCTTT TCAGTCAGCA TGATAGAA

(2) INFORMATION FOR SEQ ID NO: 27:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 27 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 27:

GTTTCTAGAT CAGAGTTTGA GTAAGCC

27

(2) INFORMATION FOR SEQ ID NO: 28:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 30 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 28:

CCAAGACTAG TTAACACAGC ATGATCGAAA

30

(2) INFORMATION FOR SEQ ID NO: 29:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 30 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 29:

CCAATGCGGC CGCACTCAGA ATTCAACCTG

30

(2) INFORMATION FOR SEQ ID NO: 30:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 972 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 30:

TCTAGACTCA GGA CTGAGAA GAAGTAAAAC CGTTTGCTGG GGCTGGCCTG ACTCACCAGC 60  
TGCCATGCAG CAGCCCTTCA ATTACCCATA TCCCCAGATC TACTGGGTGG ACAGCAGTGC 120  
CAGCTCTCCC TGGGCCCTC CAGGCACAGT TCTTCCCTGT CCAACCTCTG TGCCCAGAAG 180

GCCTGGTCAA	AGGAGGCCAC	CACCACCACC	GCCACCGCCA	CCACTACCAC	CTCCGCCGCC	240
GCCGCCACCA	CTGCCTCCAC	TACCGCTGCC	ACCCCTGAAG	AAGAGAGGGA	ACCACAGCAC	300
AGGCCTGTGT	CTCCTTGTGA	TGTTTTTCAT	GGTTCTGGTT	GCCTTGGTAG	GATTGGGCCT	360
GGGGATGTTT	CAGCTCTTCC	ACCTACAGAA	GGAGCTGGCA	GAACCTCCGAG	AGTCTACCAG	420
CCAGATGCAC	ACAGCATCAT	CTTTGGAGAA	GCAAATAGGC	CACCCCAGTC	CACCCCCTGA	480
AAAAAAGGAG	CTGAGGAAAG	TGGCCCATTT	AACAGGCAAG	TCCAACTCAA	GGTCCATGCC	540
TCTGGAATGG	GAAGACACCT	ATGGAATTGT	CCTGCTTTCT	GGAGTGAAGT	ATAAGAAGGG	600
TGGCCTTGTG	ATCAATGAAA	CTGGGCTGTA	CTTTGTATAT	TCCAAAGTAT	ACTTCCGGGG	660
TCAATCTTGC	AACAACCTGC	CCCTGAGCCA	CAAGGTCTAC	ATGAGGAACT	CTAAGTATCC	720
CCAGGATCTG	GTGATGATGG	AGGGGAAGAT	GATGAGCTAC	TGCACTACTG	GGCAGATGTG	780
GGCCCGCAGC	AGCTACCTGG	GGGCAGTGTT	CAATCTTACC	AGTGCTGATC	ATTTATATGT	840
CAACGTATCT	GAGCTCTCTC	TGGTCAATTT	TGAGGAATCT	CAGACGTTTT	TCGGCTTATA	900
TAAGCTCTAA	GAGAAGCACT	TTGGGATTCT	TTCCATTATG	ATTCTTTGTT	ACAGGCACCG	960
AGATGTTCTA	GA					972

(2) INFORMATION FOR SEQ ID NO: 31:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH:	885 base pairs
(B) TYPE:	nucleic acid
(C) STRANDEDNESS:	single
(D) TOPOLOGY:	linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 31:

ATGCAGCAGC	CCATGAATTA	CCCATGTCCC	CAGATCTTCT	GGGTAGACAG	CAGTGCCACT	60
TCATCTTGGG	CTCCTCCAGG	GTCAGTTTTT	CCCTGTCCAT	CTTGTGGGCC	TAGAGGGCCG	120
GACCAAAGGA	GACCGCCACC	TCCACCACCA	CCTGTGTCAC	CACTACCACC	GCCATCACAA	180
CCACTCCCAC	TGCCGCCACT	GACCCCTCTA	AAGAAGAAGG	ACCACAACAC	AAATCTGTGG	240
CTACCGGTGG	TATTTTTTCAT	GGTTCTGGTG	GCTCTGGTTG	GAATGGGATT	AGGAATGTAT	300
CAGCTCTTCC	ACCTGCAGAA	GGAACCTGGCA	GAACCTCCGTG	AGTTCACCAA	CCAAAGCCTT	360
AAAGTATCAT	CTTTTGAAAA	GCAAATAGCC	AACCCCAGTA	CACCCTCTGA	AAAAAAAAGAG	420
CCGAGGAGTG	TGGCCCATTT	AACAGGGAAC	CCCCACTCAA	GGTCCATCCC	TCTGGAATGG	480
GAAGACACAT	ATGGAACCGC	TCTGATCTCT	GGAGTGAAGT	ATAAGAAAGG	TGGCCTTGTG	540
ATCAACGAAG	CTGGGTTGTA	CTTCGTATAT	TCCAAAGTAT	ACTTCCGGGG	TCAGTCTTGC	600
AACAACCAGC	CCCTAAACCA	CAAGGTCTAT	ATGAGGAACT	CTAAGTATCC	TGGGGATCTG	660
GTGCTAATGG	AGGAGAAGAG	GTTGAACTAC	TGCACTACTG	GACAGATATG	GGCCACAGC	720
AGCTACCTGG	GGGCAGTATT	CAATCTTACC	AGTGCTGACC	ATTTATATGT	CAACATATCT	780
CAACTCTCTC	TGATCAATTT	TGAGGAATCT	AAGACCTTTT	TCGGCTTGTA	TAAGCTTTAA	840
AAGAAAAGC	ATTTTAAAT	GATCTACTAT	TCTTTATCAT	GGGCA		885

(2) INFORMATION FOR SEQ ID NO: 32:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH:	29 base pairs
(B) TYPE:	nucleic acid
(C) STRANDEDNESS:	single
(D) TOPOLOGY:	linear

# DISEASE

29

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 30 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

30

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 27 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

27

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 26 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

26

(2) INFORMATION FOR SEQ ID NO: 36:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 680 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 36:

ATGCCGGAGG	AAGGTCGCCC	TTGCCCCTGG	GTTCGCTGGA	GCGGGACCGC	GTTCCAGCGC	60
CAATGGCCAT	GGCTGCTGCT	GGTGGTGTTT	ATTACTGTGT	TTTGCTGTTG	GTTTCATTGT	120
AGCGGACTAC	TCAGTAAGCA	GCAACAGAGG	CTGCTGGAGC	ACCGTGAGCC	GCACACAGCT	180
GAGTTACAGC	TGAATCTCAC	AGTTCCCTCG	AAGGACCCCA	CACTGCGCTG	GGGAGCAGGC	240
CCAGCCTTGG	GAAGGTCCTT	CACACACGGA	CCAGAGCTGG	AGGAGGGCCA	TCTGCGTATC	300
CATCAAGATG	GCCTCTACAG	GCTGCATATC	CAGGTGACAC	TGGCCAACTG	CTCTTCCCCA	360
GGCAGCACCC	TGCAGCACAG	GGCCACCCTG	GCTGTGGGCA	TCTGCTCCCC	CGCTGCGCAC	420
GGCATCAGCT	TGCTGCGTGG	GCGCTTTTGA	CAGGACTGTA	CAGTGGCATT	ACAGCGCCTG	480
ACATACCTGG	TCCACGGAGA	TGTCCTCTGT	ACCAACCTCA	CCCTGCCCTCT	GCTGCCGTCC	540
CGCAACGCTG	ATGAGACCTT	CTTTGGAGTT	CAGTGGATAT	GCCCTTGACC	ACAACTCCAG	600
GATGACTTGT	GAATATTTTT	TTTCTTTTCA	AGTTCTACGT	ATTTATAAAT	GTATATAGTA	660
CACATAAAAA	AAAAAAAAAA					680

(2) INFORMATION FOR SEQ ID NO: 37:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 846 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 37:

ATGCAGCAGC	CCTTCAATTA	CCCATATCCC	CAGATCTACT	GGGTGGACAG	CAGTGCCAGC	60
TCTCCCTGGG	CCCCTCCAGG	CACAGTTCTT	CCCTGTCCAA	CCTCTGTGCC	CAGAAGGCCT	120
GGTCAAAGGA	GGCCACCACC	ACCACCGCCA	CCGCCACCAC	TACCACCTCC	GCCGCCGCCG	180
CCACCACTGC	CTCCACTACC	GCTGCCACCC	CTGAAGAAGA	GAGGGAACCA	CAGCACAGGC	240
CTGTGTCTCC	TTGTGATGTT	TTTCATGGTT	CTGGTTGCCT	TGGTAGGATT	GGGCCTGGGG	300
ATGTTTCAGC	TCTTCCACCT	GCAGAAGGAA	CTGGCAGAAC	TCCGTGAGTT	CACCAACCAA	360
AGCCTTAAAG	TATCATCTTT	TGAAAAGCAA	ATAGGCCACC	CCAGTCCACC	CCCTGAAAAA	420
AAGGAGCTGA	GGAAAGTGGC	CCATTTAACA	GGCAAGTCCA	ACTCAAGGTC	CATGCCTCTG	480
GAATGGGAAG	ACACCTATGG	AATTGTCCTG	CTTTCTGGAG	TGAAGTATAA	GAAGGGTGGC	540
CTTGTGATCA	ATGAAACTGG	GCTGTACTTT	GTATATTCCA	AAGTATACTT	CCGGGGTCAA	600
TCTTGCAACA	ACCTGCCCTG	GAGCCACAAG	GTCTACATGA	GGAAGTCTAA	GTATCCCCAG	660
GATCTGGTGA	TGATGGAGGG	GAAGATGATG	AGCTACTGCA	CTACTGGGCA	GATGTGGGCC	720
CGCAGCAGCT	ACCTGGGGGC	AGTGTTC AAT	CTTACCAGTG	CTGATCATTT	ATATGTCAAC	780
GTATCTGAGC	TCTCTCTGGT	CAATTTT GAG	GAATCTCAGA	CGTTTTTTCGG	CTTATATAAG	840
CTCTAA						846

(2) INFORMATION FOR SEQ ID NO: 38:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 786 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 38:

ATGCAGCAGC CCTTCAATTA CCCATATCCC CAGATCTACT GGGTGGACAG CAGTGCCAGC 60  
TCTCCCTGGG CCCCTCCAGG CACAGTTCTT CCCTGTCCAA CCTCTGTGCC CAGAAGGCCT 120  
GGTCAAAGGA GGCCACCACC ACCACCGCCA CCGCCACCAC TACCACCTCC GCCGCCGCCG 180  
CCACCACTGC CTCCACTACC GCTGCCACCC CTGAAGAAGA GAGGGAACCA CAGCACAGGC 240  
CTGTGTCTCC TTGTGATGTT TTTCATGGTT CTGGTTGCCT TGGTAGGATT GGGCCTGGGG 300  
ATGTTTCAGC TCTTCCGCTT CGCACAGGCT ATAGGCCACC CCAGTCCACC CCCTGAAAAA 360  
AAGGAGCTGA GGAAAGTGGC CCATTTAACA GGCAAGTCCA ACTCAAGGTC CATGCCCTCTG 420  
GAATGGGAAG ACACCTATGG AATTGTCCCTG CTTTCTGGAG TGAAGTATAA GAAGGGTGGC 480  
CTTGTGATCA ATGAACTGG GCTGTACTTT GTATATTCCA AAGTATACTT CCGGGGTCAA 540  
TCTTGCAACA ACCTGCCCCT GAGCCACAAG GTCTACATGA GGAACCTCTAA GTATCCCCAG 600  
GATCTGGTGA TGATGGAGGG GAAGATGATG AGCTACTGCA CTAAGTGGGCA GATGTGGGCC 660  
CGCAGCAGCT ACCTGGGGGC AGTGTTCAT CTTACCAGTG CTGATCATTT ATATGTCAAC 720  
GTATCTGAGC TCTCTCTGGT CAATTTTGAG GAATCTCAGA CGTTTTTCGG CTTATATAAG 780  
CTCTAA 786

(2) INFORMATION FOR SEQ ID NO: 39:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 864 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 39:

ATGCAGCAGC CCTTCAATTA CCCATATCCC CAGATCTACT GGGTGGACAG CAGTGCCAGC 60  
TCTCCCTGGG CCCCTCCAGG CACAGTTCTT CCCTGTCCAA CCTCTGTGCC CAGAAGGCCT 120  
GGTCAAAGGA GGCCACCACC ACCACCGCCA CCGCCACCAC TACCACCTCC GCCGCCGCCG 180  
CCACCACTGC CTCCACTACC GCTGCCACCC CTGAAGAAGA GAGGGAACCA CAGCACAGGC 240  
CTGTGTCTCC TTGTGATGTT TTTCATGGTT CTGGTTGCCT TGGTAGGATT GGGCCTGGGG 300  
ATGTTTCAGC TCTTCCAATC CTCCATCCTC CCCTATGCCG GAGGAGGGTT CGGGCTGCTC 360  
GGTGCGGCGC AGGCCCTATG GGTGCGTCCT GCGGCCATCC TCAATCCTAT AGGCCACCCC 420  
AGTCCACCCC CTGAAAAAAA GGAGCTGAGG AAAGTGGCCC ATTTAACAGG CAAGTCCAAC 480  
TCAAGGTCCA TGCCTCTGGA ATGGGAAGAC ACCTATGGAA TTGTCTTGCT TTCTGGAGTG 540  
AAGTATAAGA AGGGTGGCCT TGTGATCAAT GAAACTGGGC TGTACTTTGT ATATTCCAAA 600  
GTATACTTCC GGGGTCAATC TTGCAACAAC CTGCCCCTGA GCCACAAGGT CTACATGAGG 660  
AACTCTAAGT ATCCCCAGGA TCTGGTGATG ATGGAGGGGA AGATGATGAG CTAAGTGCCT 720  
ACTGGGCAGA TGTGGGCCCC CAGCAGCTAC CTGGGGGCGA TGTTCAATCT TACCAGTGCT 780  
GATCATTTAT ATGTCAACGT ATCTGAGCTC TCTCTGGTCA ATTTTGAGGA ATCTCAGACG 840  
TTTTTCGGCT TATATAAGCT CTA 864



(2) INFORMATION FOR SEQ ID NO: 40:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 828 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 40:

ATGCAGCAGC CCTTCAATTA CCCATATCCC CAGATCTACT GGGTGGACAG CAGTGCCAGC 60  
TCTCCCTGGG CCCCTCCAGG CACAGTTCTT CCCTGTCCAA CCTCTGTGCC CAGAAGGCCCT 120  
GGTCAAAGGA GGCCACCACC ACCACCGCCA CCGCCACCAC TACCACCTCC GCCGCCGCCG 180  
CCACCACTGC CTCCACTACC GCTGCCACCC CTGAAGAAGA GAGGGAACCA CAGCACAGGC 240  
CTGTGTCTCC TTGTGATGTT TTTTCATGGTT CTGGTTGCCT TGGTAGGATT GGGCCTGGGG 300  
ATGTTTCAGC TCTTCCACCT ACAGCGAGAG TCTACCAGCC AGATGCACAC AGCATCATCT 360  
TTGGAGAAGC AAATAGGCCA CCCAGTCCA CCCCTGAAA AAAAGGAGCT GAGGAAAGTG 420  
GCCCCATTTAA CAGGCAAGTC CAACTCAAGG TCCATGCCTC TGGAAATGGGA AGACACCTAT 480  
GGAATTGTCC TGCTTTCTGG AGTGAAGTAT AAGAAGGGTG GCCTTGTGAT CAATGAAACT 540  
GGGCTGTACT TTGTATATTC CAAAGTATAC TTCCGGGGTC AATCTTGCAA CAACCTGCCC 600  
CTGAGCCACA AGGTCTACAT GAGGAACTCT AAGTATCCCC AGGATCTGGT GATGATGGAG 660  
GGGAAGATGA TGAGCTACTG CACTACTGGG CAGATGTGGG CCCGCAGCAG CTACCTGGGG 720  
GCAGTGTTC AATCTTACCAG TGCTGATCAT TTATATGTCA ACGTATCTGA GCTCTCTCTG 780  
GTCAATTTTG AGGAATCTCA GACGTTTTTC GGCTTATATA AGCTCTAA 828

(2) INFORMATION FOR SEQ ID NO: 41:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 846 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 41:

ATGGCTATGA TGGAGGTCCA GGGGGGACCC AGCCTGGGAC AGACCTGCGT GCTGATCGTG 60  
ATCTTCACAG TGCTCCTGCA GTCTCTCTGT GTGGCTGTAA CTTACGTGTA CTTTACCAAC 120  
GAGCTGAAGC AGATGCAGGA CAAGTACTCC AAAAGTGGCA TTGCTTGTTT CTTAAAAGAA 180  
GATGACAGTT ATTGGGACCC CAATGACGAA GAGAGTATGA ACAGCCCCTG CTGGCAAGTC 240  
AAGTGGCAAC TCCGTCAGCT CGTTAGAAAAG ATGATTTTGA GAACCTCTGA GGAAACCATT 300  
TCTACAGTTC AAGAAAAGCA ACAAATATT TCTCCCCTAG TGAGAGAAAAG AGGTCCTCAG 360  
AGAGTAGCAG CTCACATAAC TGGGACCAGA GGAAGAAGCA ACACATTGTC TTCTCCAAAC 420  
TCCAAGAATG AAAAGGCTCT GGGCCGCAA ATAACTCCT GGAATCATC AAGGAGTGGG 480  
CATTCATTCC TGAGCAACTT GCACTTGAGG AATGGTGAAC TGGTCATCCA TGAAAAAGGG 540  
TTTTACTACA TCTATCCCA AACATACTTT CGATTTTCAGG AGGAAATAAA AGAAAACACA 600  
AAGAACGACA AACAAATGGT CCAATATATT TACAAATACA CAAGTTATCC TGACCCTATA 660  
TTGTTGATGA AAAGTGCTAG AAATAGTTGT TGGTCTAAAG ATGCAGAATA TGGACTCTAT 720  
TCCATCTATC AAGGGGGAAT ATTTGAGCTT AAGGAAAATG ACAGAATTTT TGTTTTCTGTA 780  
ACAAATGAGC ACTTGATAGA CATGGACCAT GAAGCCAGTT TTTTCGGGGC CTTTTTAGTT 840  
GGCTAA 846

(2) INFORMATION FOR SEQ ID NO: 42:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 876 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 42:

ATGCCTTCCT CAGGGGCCCT GAAGGACCTC AGCTTCAGTC AGCACTTCAG GATGATGGTG 60  
ATTTGCATAG TGCTCCTGCA GGTGCTCCTG CAGGCTGTGT CTGTGGCTGT GACTTACATG 120  
TACTTCACCA ACGAGATGAA GCAGCTGCAG GACAATTACT CCAAATTGG ACTAGCTTGC 180  
TTCTCAAAGA CGGATGAGGA TTTCTGGGAC TCCACTGATG GAGAGATCTT GAACAGACCC 240  
TGCTTGCAAG TTAAGAGGCA ACTGTATCAG CTCATTGAAG AGGTGACTTT GAGAACCTTT 300  
CAGGACACCA TTTCTACAGT TCCAGAAAAG CAGCTAAGTA CTCCTCCCTT GCCCAGAGGT 360  
GGAAGACCTC AGAAAGTGGC AGCTCACATT ACTGGGATCA CTCGGAGAAG CAACTCAGCT 420  
TTAATTCCAA TCTCCAAGGA TGGAAAGACC TTAGGCCAGA AGATTGAATC CTGGGAGTCC 480  
TCTCGGAAAG GGCATTTCATT TCTCAACCAC GTGCTCTTTA GGAATGGAGA GCTGGTCATC 540  
GAGCAGGAGG GCCTGTATTA CATCTATTCC CAAACATACT TCCGATTTC GGAAGCTGAA 600  
GACGCTTCCA AGATGGTCTC AAAGGACAAG GTGAGAACCA AACAGCTGGT GCAGTACATC 660  
TACAAGTACA CCAGCTATCC GGATCCCATG GTGCTCATGA AGAGCGCCAG AAACAGCTGT 720  
TGGTCCAGAG ATGCCGAGTA CGGACTGTAC TCCATCTATC AGGGAGGATT GTTCGAGCTA 780  
AAAAAAATG ACAGGATTTT TGTTTCTGTG ACAAATGAAC ATTTGATGGA CCTGGATCAA 840  
GAAGCCAGCT TCTTTGGAGC CTTTTTAATT AACTAA 876

(2) INFORMATION FOR SEQ ID NO: 43:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 720 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 43:

ATGGAGCCAG GGCTGCAACA AGCAGGCAGC TGTGGGGCTC CTTCCCTTGA CCCAGCCATG 60  
CAGGTGCAGC CCGGCTCGGT AGCCAGCCCC TGGAGAAGCA CGAGGCCCTG GAGAAGCACA 120  
AGTCGCAGCT ACTTCTACCT CAGCACCACC GCACTGGTGT GCCTTGTTGT GGCAGTGGCG 180  
ATCATTCTGG TACTGGTAGT CCAGAAAAAG GACTCCACTC CAAATACAAC TGAGAAGGCC 240  
CCCCTTAAAG GAGGAAATTG CTCAGAGGAT CTCTTCTGTA CCCTGAAAAG TACTCCATCC 300  
AAGAAGTCAT GGGCCTACCT CCAAGTGTC AAGCATCTCA ACAATACCAA ACTGTCATGG 360  
AACGAAGATG GCACCATCCA CGGACTCATA TACCAGGACG GGAACCTGAT AGTCCAATTC 420  
CCTGGCTTGT ACTTCATCGT TTGCCAACTG CAGTTCCTCG TGCAGTGCTC AAATCATTCT 480  
GTGGACCTGA CATTGCAGCT CCTCATCAAT TCCAAGATCA AAAAGCAGAC GTTGGTAACA 540  
GTGTGTGAGT CTGGAGTTCA GAGTAAGAAC ATCTACCAGA ATCTCTCTCA GTTTTTGCTG 600  
CATTAATTAC AGGTCAACTC TACCATATCA GTCAGGGTGG ATAATTTCCA GTATGTGGAT 660  
ACAAACACTT TCCCTCTTGA TAATGTGCTA TCCGTCTTCT TATATAGTAG CTCAGACTGA 720

(2) INFORMATION FOR SEQ ID NO: 44:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 930 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 44:

ATGGACCAGC	ACACACTTGA	TGTGGAGGAT	ACCGCGGATG	CCAGACATCC	AGCAGGTACT	60
TCGTGCCCCCT	CGGATGCGGC	GCTCCTCAGA	GATACCGGGC	TCCTCGCGGA	CGCTGCGCTC	120
CTCTCAGATA	CTGTGCGCCC	CACAAATGCC	GCGCTCCCCA	CGGATGCTGC	CTACCCTGCG	180
GTTAATGTTC	GGGATCGCGA	GGCCGCGTGG	CCGCCTGCAC	TGAACTTCTG	TTCCCGCCAC	240
CCAAAGCTCT	ATGGCCTAGT	CGCTTTGGTT	TTGCTGCTTC	TGATCGCCGC	CTGTGTTCTT	300
ATCTTCACCC	GCACCGAGCC	TCGGCCAGCG	CTCACAATCA	CCACCTCGCC	CAACCTGGGT	360
ACCCGAGAGA	ATAATGCAGA	CCAGGTCACC	CCTGTTTCCC	ACATTGGCTG	CCCCAACACT	420
ACACAACAGG	GCTCTCCTGT	GTTGCGCAAG	CTACTGGCTA	AAAACCAAGC	ATCGTTGTGC	480
AATACAATC	TGAACTGGCA	CAGCCAAGAT	GGAGCTGGGA	GCTCATACCT	ATCTCAAGGT	540
CTGAGGTACG	AAGAAGACAA	AAAGGAGTTG	GTGGTAGACA	GTCCCGGGCT	CTACTACGTA	600
TTTTTGAAC	TGAAGCTCAG	TCCAACATTC	ACAAACACAG	GCCACAAGGT	GCAGGGCTGG	660
GTCTCTCTTG	TTTTGCAAGC	AAAGCCTCAG	GTAGATGACT	TTGACAACTT	GGCCCTGACA	720
GTGGAATGT	TCCCTTGCTC	CATGGAGAAC	AAGTTAGTGG	ACCGTTCCTG	GAGTCAACTG	780
TTGCTCCTGA	AGGCTGGCCA	CCGCCTCAGT	GTGGGTCTGA	GGGCTTATCT	GCATGGAGCC	840
CAGGATGCAT	ACAGAGACTG	GGAGCTGTCT	TATCCCAACA	CCACCAGCTT	TGGACTCTTT	900
CTTGTGAAAC	CCGACAACCC	ATGGGAATGA				930

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